




Mate Choice Copying in Humans: a Systematic Review and Meta-Analysis

Amany Gouda-Vossos¹  · Shinichi Nakagawa¹ ·
Barnaby J. W. Dixon^{1,2} · Robert C. Brooks¹

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Abstract

Objective Mate choice copying (MCC) is a type of non-independent mate choice where the ‘probability of acceptance’ of a potential mate increases if they are observed to be chosen by others first. The phenomenon was first demonstrated in several non-human taxa, with studies on humans conducted shortly after. The effect has been consistently documented among women choosing men (female choice), with mixed results among men choosing women (male choice). To understand and test the overall level of support for MCC in humans, we conducted a systematic review and meta-analysis, including a sensitivity analysis for publication bias.

Methods We found that the two most commonly used methods of studying MCC in humans involved either the ‘addition’ of a cue (opposite sex other) or the ‘augmentation’ of cues (manipulating ‘mate quality’ of opposite sex other). We performed separate meta-analyses for these two approaches, splitting each into male choice and female choice.

Results Women were more likely to rate male targets as more desirable when presented alongside a female while no obvious effects were detected with male choice. These sex differences disappeared in studies that ‘augment’ cues, as both sexes rated targets as more attractive when in the presence of more desirable others. We also detected high levels of heterogeneity in effect sizes and a moderate publication bias in favor of positive reports of MCC.

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✉ Amany Gouda-Vossos
z3221942@ad.unsw.edu.au

¹ Evolution & Ecology Research Centre, School of Biological, Earth & Environmental Sciences, University of New South Wales, Sydney, NSW, Australia

² School of Psychology, The University of Queensland, QLD, Brisbane, Australia

Conclusions Our results provide clarification for documented sex differences (or lack thereof) in human MCC. We also discuss the importance of method consistency in studies that transfer ideas from non-human to human behavioral studies, highlighting replication issues in the light of the publication crisis in psychological science.

Keywords Mate choice copying · Mate preferences · Sex differences · Social judgment · Desirability

Introduction

Prevailing social factors influence the evolution of mate choice (West-Eberhard 2014), producing phenotypic plasticity in response to contextual variation, including the distribution of available mates (Jennions and Petrie 1997). Mate choice copying (MCC), wherein the likelihood of an individual accepting a mate is augmented when that mate has been seen, or inferred to have been chosen as a mate by others, represents one social process that may impact on attractiveness (Pruett-Jones 1992). MCC may allow individuals to assess the quality of potential mates without having to bear the full costs of mate searching (Wade & Pruett-Jones 1990), making copying a possible adaptive feature of mate choice behavior. In non-human animals, MCC has also been shown to reverse mate preferences, leading to the claim that mate choice copying can alter the form and direction of sexual selection (Dugatkin and Godin 1992, but see Brooks 1998).

Detection of Mate Choice Copying; from Non-human to Human Subjects

Mate choice copying was first documented in guppies (*Poecilia reticulata*) (Dugatkin and Godin 1992, but see Brooks 1996, 1999) and has since been reported in sailfin mollies (*Poecilia latipinna*) (Schlupp and Ryan 1997), Japanese quail (*Coturnix japonica*) (Galef and White 1998), Zebra Finches (*Taeniopygia guttata*) (Swaddle et al. 2005) and flies (*Drosophila serrata*) (Auld et al. 2009). Dugatkin (2000) first suggested that humans may also copy the mate choices of other individuals, particularly given the importance of social information in human mate choice. Inspired by Dugatkin's (2000) research on imitative learning and mate choice, and a popular article by Jonathan Knight (2000), Uller and Johansson (2003) tested the hypothesis that men who wear wedding rings enjoy elevated attractiveness as a form of mate choice copying. Women had short interviews with two men each, experimentally assigned to wear or not wear a wedding ring, after which they reported their preferences for the men. No evidence of a wedding ring effect (i.e. mate choice copying) was found (Uller and Johansson 2003).

While MCC is best measured via number of copulations in non-human animals (Kraak 1996), studies in humans rely on indirect experimental approaches. In fact, the Uller and Johansson (2003) study was unusual in that it permitted direct interaction between subjects and models. Other tests of human mate choice copying have relied on more controlled experimental circumstances, and subjects are usually asked to judge a model's attractiveness or preferences for a romantic relationship with the model individual. These studies manipulate cues such as statement of marital status (Eva and Wood 2006); display models in presence of an opposite-sex target (Waynforth

2007) or manipulate the morphological traits of the opposite sex others, such as facial masculinity/femininity (Jones et al. 2007; Little et al. 2008). The majority of studies testing MCC in humans are measured by obtaining images of men and women (together and separately) and having them rated for desirability, interest or physical attractiveness.

Mechanisms Encompassing Individual-Based Mate Choice Copying

The majority of studies on MCC effects in humans have focused on ‘individual-based copying’ where the dependent variable is the response of the subject toward the target individual presented alongside an opposite-sex other, compared with a target presented alone (Bowers et al. 2012). Recent studies have suggested that MCC may extend beyond solely an ability to attract a partner and include assessing the underlying biological and social qualities of potential mates. For instance, a man in the presence of a ‘high quality women of higher mate value’ who is highly physically attractive or has a desirable personality informs female copiers that the man must also have high-quality features that are not readily observable (Anderson and Surbey 2014; Chu 2012; Little et al. 2011a). It is possible that ‘cues of quality’ provide useful information to women who observe (copiers), thereby providing grounds to discriminate between high and low-quality prospective mates. By copying the choice of a high-quality female that would most likely only pair with a high-quality male (Buss and Barnes 1986), female copiers might enhance the genetic or direct benefits gained via mate choice and reduce direct costs or risk to themselves and future offspring.

Whilst men are also expected to choose women of high mate value, the benefits and risks associated with mate choice and mate choice copying differ between women and men (Geary et al. 2004). Selecting a female partner who is either currently or has recently been in a relationship with another man may increase a copying man’s risk of misdirecting parental investment to the offspring of another male (Hill and Buss 2008; Buss and Schmitt 1993; Trivers 1972), which is why MCC behaviours are not considered to be part of male mate choice. However, the evidence regarding mate choice copying in men has been mixed; some reporting mate choice copying (Yorzinski and Platt 2010) and other not (Hill and Buss 2008).

In order to explore these mechanisms regarding mate choice copying and mate quality, previous studies have manipulated physical attractiveness (e.g. high and low) (Little et al. 2008; Little et al. 2011a), prosocial personality traits (e.g. pleasant/unpleasant); (Chu 2012; Little et al. 2015) and, sentiments towards targets (Deng and Zheng 2015; Jones et al. 2007). Interestingly, the phenomenon of mate choice copying and mate quality was documented in older studies in a variety of contexts under different terminology. For example, Sigall and Landy (1973) described a ‘radiating beauty’ effect, where the presence of a highly attractive female increases the attractiveness of a male. Other studies paired ‘dissimilarly attractive’ men and women and found that male rated attractiveness was related to the paired female’s attractiveness (Bar-tal and Saxe 1976; Hartnett and Elder 1973; Meiners and Sheposh 1977). More recent studies have attempted to define this process as a different form of mate choice copying i.e. mate quality bias (Vakirtzis and Roberts 2010); or a mate choice copying *like* effects (see Hill and Buss 2008; Rodeheffer et al. 2016; Jones et al. 2007). It has been argued, however, that this process involves the use of social information (i.e. the

presence of an opposite sex other) by an observer that influences mate choice, which is incorporated within the parameters of mate choice copying (Witte and Godin 2010). Taking all into consideration, we define studies of individual-based copying comprising of two mechanisms; 1) the mere presence of a particular cue can drive MCC (i.e. addition of cue) and 2) more complex effects involving the apparent quality of a cue underpins MCC (augmentation of cue).

Sex Differences and Attitudes Linked to Mate Choice Copying

People judge the character and likeability of targets based on characteristics of the opposite sex other they are paired with (Bar-tal and Saxe 1976; Hartnett and Elder 1973; Meiners and Sheposh 1977) with different effects on men and women. Overall, men are perceived more favorably than women when in the presence of an attractive female (Hartnett and Elder 1973; Bar-tal and Saxe 1976; Meiners and Sheposh 1977). As such, men may feel more comfortable or may even desire to be in the company of women as it improves their status as a mate. In contrast, the social effects for a woman presented alongside a man depends more on her mate value, the mate value of the man she appears with, and the cultural context (Hartnett and Elder 1973; Bar-tal and Saxe 1976; Meiners and Sheposh 1977) and as a result, women may not be as willing to be in the company of men as not only is their attractiveness diminished, but factors may further impede their desirability, both sexual and social. By testing and understanding mate choice copying effects we may gain some insights into one simple component involved with the sexual double standard (Crawford and Popp 2003; Marks and Fraley 2005); where men are rewarded for having a high number of sexual partners, while women are penalized for the same behavior.

Meta-Analysis

In the current study, we present a meta-analysis of the available evidence for MCC in humans. While the paucity of studies across the various methodologies employed makes large-scale comparisons of approaches unfeasible, there are sufficient studies investigating sex differences in MCC to conduct a series of mini meta-analyses. These studies have tested (i) Addition-based MCC effects in women choosing among men, (ii) Addition - based MCC effects in men choosing among women, (iii) Augmented-cue MCC effects in women choosing among men and (iv) Augmented-cue MCC effects in men choosing among women. We used meta-analyses to test for sex differences in mate choice copying effects because evolutionary studies of human mate choice (Buss 1991; Buss and Schmitt 1993; Gangestad and Simpson 2000) provide ample reasons to predict that the benefits and costs of observing and imitating the mate choice of others will differ.

Method

Literature Search for Systematic Review

We followed the search protocol from the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement (Moher et al. 2009) where possible.

To start, we searched *Web of Science*, *PsycINFO*, and *PubMed* using the search terms “Mate Choice Copying” OR “Mate Copying” OR “Non-Independent Mate Choice” on the 10th of May 2014. As this was a meta-analysis and systematic review, ethics approval was not required.

The combined sources gave us a total of 252 articles – which was reduced to 134 when duplicates were removed (Fig. 1). Twenty-three articles were discarded based on title (e.g. studies were focused on other forms of non-independent mate choice that did not include mate choice copying). A further 69 articles were rejected, as studies were focused on non-human animals.

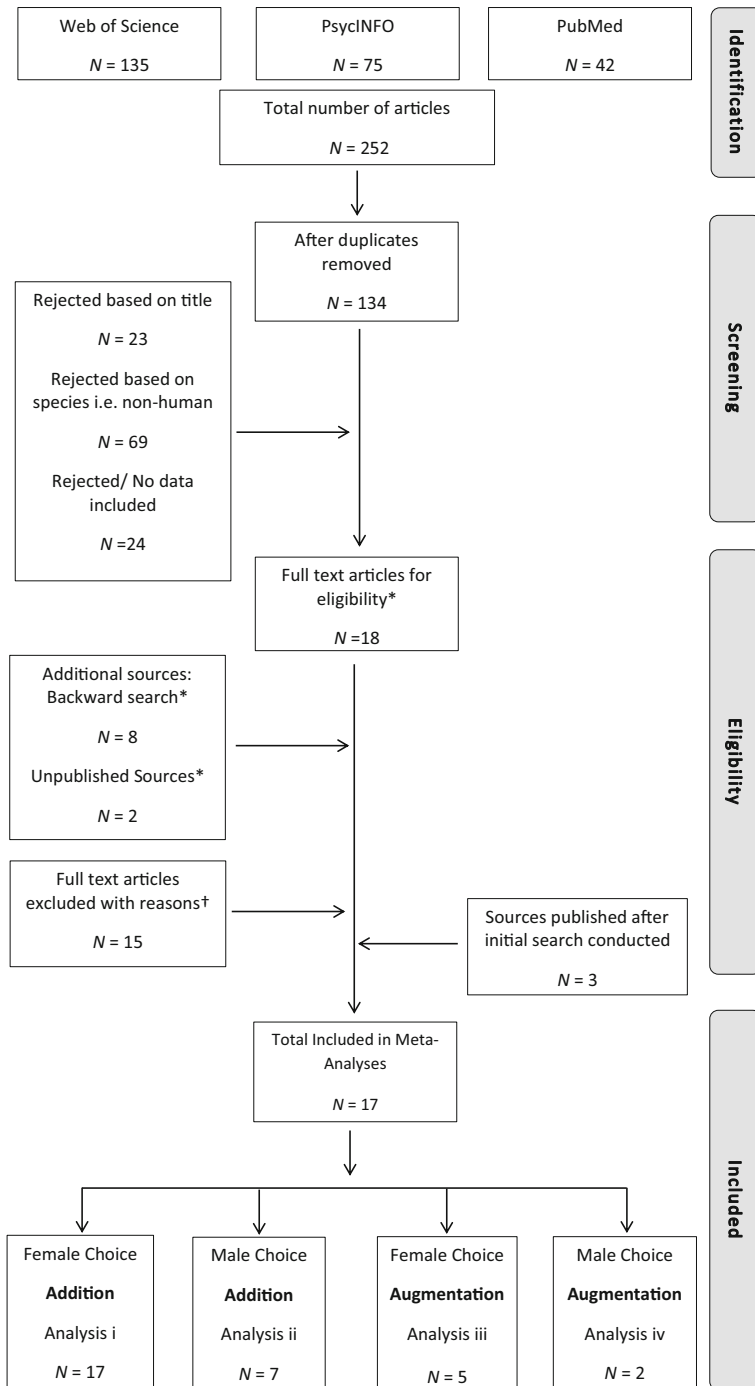
This left a total of 42 articles. We applied our exclusion criteria to this group and a further 24 articles that did not contain quantifiable data or were reviews, commentaries or replies were excluded (see Online Resource 1 for more list of omitted papers).

We implemented a backward/chain search which involved identifying references or works cited in an article. Using this method we found an additional 8 articles. It is likely that these articles did not come up on our search as they were either older (pre- 1990), did not report their finding specifically as a ‘mate choice copying effect’ or were published in journals not accessible through the databases we used. As we were compiling data for the review and meta-analysis; issues in replication in psychological science came under light and the Open Science Collaboration (2015) estimated the reproducibility of psychological science by replicating 100 experimental and correlational studies. We searched and found that the results of one of the studies included in the review (i.e. Bressan and Stranieri 2008) were replicated by Frazier & Hasselman (2015); which was included in the review and meta-analysis. We sent a series of e-mails to researchers who have published multiple papers on this topic asking if there were any unpublished data, which yielded 2 unpublished articles. This left a total of 29 articles (see Fig. 1; Tables 1 & 2). To keep updated, we set up a series of ‘Google Alerts’ using the keywords mentioned above. From this, we yielded 2 more articles which were published after conducting the original search (see Fig. 1; Tables 1 and 2). This was ceased in October 2016. This left a final total of 31 articles for the systematic review.

Inclusion and Exclusion Criteria for Meta-Analysis

To the 31 articles, we then applied the following inclusion criteria:

- (i) An article must report measurements of physical attractiveness and/or desirability including ‘willingness to date’ or ‘interest’.
- (ii) Experimental design must include treatments of male and/or female targets presented alone and targets presented with a cue that triggers mate choice copying i.e. presence of an opposite sex other, wearing a wedding ring, declaration of relationship or sexual history; or/and:
- (iii) Experimental design must include treatments of male and/or female targets presented with opposite sex others with more favorable characteristics and targets with less favorable characteristics i.e. opposite sex other with high or low attractiveness, personality, and character.



*See table 1 for full articles for eligibility including additional sources and unpublished source

†See table 1 for list of full text articles with reasons why they were excluded

Fig. 1 Flowchart of the screening process for article selection

From each article, data was examined and papers were excluded based on the following criteria:

- (i) Insufficient data; we required the Means and Standard Deviations (or anything else that would allow us to calculate Means and SDs) of rated attractiveness/desirability. We also required data to be separated by participant sex, as we examined female and male choice separately (i.e. Sigall and Landy (1973) was excluded due to this). Authors were contacted and data was requested if data was not observable.
- (ii) Consistency of methodology; studies that required participants to compare and choose between 2 targets (instead of rating the attractiveness of 1 target) such as Chu (2012) and Little et al. (2008) were excluded. Additionally, studies that included measurements that did not allude to attractiveness or desirability were excluded; for instance, Vakirtzis and Roberts (2012a) collected Questionnaires regarding previous relationships and mating as opposed to rating target attractiveness/desirability/willingness to date.
- (iii) Studies that include an incidental measure were excluded. Within the design, studies had to compare either the presence vs absence of opposite-sex others or the positive vs negative effects of opposite-sex others. For example, Anderson and Surbey (2014), Millinof et al. (2007) and Gouda-Vossos et al. compared the absence vs a varying number of opposite-sex others under the assumption that higher number of partners increases attractiveness; the presence vs absence effect will be measured but not the between effects of varying number of opposite-sex others

In cases where variables such as ‘long/short term’, ‘young/old age’, ‘high/low fertility’, ‘attached/single participants’ were measured, we collapsed the responses. This was done because there were not enough studies to test whether these moderators influenced the results. This left a total of 18 studies assessing 3040 participant responses, specifically for the meta-analysis. For a list of included papers and excluded papers with reasons, see Tables 1 & 2.

Data Extraction and Coding

We collected data regarding two types of manipulations that are commonly used in mate choice copying designs: 1) Addition of cue subjects alone vs with an opposite sex other (hereafter known as ‘Addition’) and 2) Augmentation of cue: subjects with a less favourable opposite sex other vs a more favourable opposite sex other (hereafter known as ‘Augmentation’). We used statistics reported in the original papers but in a few instances, we used *GetData Graph Digitizer* (Fedorov 2002) to gather information from figures and graphs if the information was not stated directly. If values were not obvious, we requested raw data from authors and used those values if the data was provided.

From this, we calculated the log response ratio ($\ln RR$). We chose this method to calculate this particular unit-less effect size statistic not only because experimental designs (including method of measurement) were not consistent from study to study (e.g. the unit of measurements differed among studies) but also because the point estimate of $\ln RR$ does not depend on sampling standard deviations of choice outcomes, which could be affected not only by mate choice differences in subjects but also by

Table 1 Summary of studies that utilized the 'addition' methodology i.e. presenting targets 'with' and 'without' opposite sex other

Female Choice		Male Choice			
Source	Measure	Sample N ^o	MCC	Meta-analysis	
Anderson and Surbey (2014)	Desirability	123	Yes	Yes	
Bowers et al. (2012)	Interest	40	Yes	Yes	Yes
Deng and Zheng (2015)	Attractiveness	76	Yes	Yes	Yes
Dunn and Doria (2010)	Attractiveness	40	Yes	Yes	Yes
Eva and Wood (2006)	Attractiveness	38	Yes	Yes	Yes
Gouda-Vossos et al. (2016)	Attractiveness	121	Yes	Yes	Yes
Hill and Buss (2008)	Desirability	478	Yes	Yes	Yes
Rodeheffer et al. (2016) exp. 1	Desirability	171	Yes	Yes	Yes
Rodeheffer et al. (2016) exp. 2	Desirability	171	Yes	Yes	Yes
Uller and Johansson (2003)	Attractiveness	97	No	Yes	Yes
Vakirtzis and Roberts (2012a)	Questionnaire	175	Yes	No ^(b)	Yes
Waynforth (2007)	Attractiveness	112	Yes	Yes	Yes
Backward Search Source					
Bar-tal and Saxe (1976)	Attractiveness	64	Yes	No ^(b)	Yes
Bressan and Stranieri (2008)	Attractiveness	208	Yes	Yes	Yes
Frazier & Hasselman (2015) ^a	Attractiveness	263	Yes	Yes	Yes
Milonoff et al. (2007)	Willingness	138	No	Yes	Yes
Parker and Burkley (2009)	Interest	97	Yes	Yes	Yes
Sigall and Landy (1973)	Attractiveness	28	Yes	No ^(b)	Yes
Unpublished Sources					
Gouda-Vossos et al. (U/P) ^b	Attractiveness	62	No	Yes	Yes
Bar-tal and Saxe (1976)	Attractiveness	64	Yes	No ^(b)	Yes
Parker and Burkley (2009)	Interest	87	Yes	Yes	Yes
Gouda-Vossos et al. (U/P) ^a ^b	Attractiveness	38	No	Yes	Yes

Table 1 (continued)

Female Choice				Male Choice					
Source	Measure	Sample N ^o	MCC	Meta-analysis	Source	Measure	Sample N ^o	MCC	Meta-analysis
Gouda-Vossos et al. (U/P) ^{b,c}	Attractiveness	241	No	Yes	Gouda-Vossos et al.(U/P) ^{b,c}	Attractiveness	303	No	Yes

Methodology not comparable: Series of Questionnaires

- (i) Sufficient data not provided: Results not separated by participant sex
 - (ii) Methodology not comparable: Physical attractiveness manipulated but not measured
- *Authors contacted and either did not have the data or did not respond

^a Replicate from Open Science Collaboration (2015)

^b Data provided in Online Resource 6

^c Data provided in Online Resource 7

Table 2 Summary of studies that ‘augmented’ cues i.e. presenting targets with ‘high’ and ‘low’ opposite-sex others

Female Choice				Male Choice							
Source	Measure	Sample N ^o	Trait Augmented	MCC meta-analysis	Source	Measure	Sample N ^o	Trait Augmented	MCC meta-analysis		
Bowers et al. (2012)	Interest	40	Interest	Yes	No	Bowers et al. (2012)	Interest	40	Interest	Yes	No ^(iv)
Chu (2012)	Attractiveness	40	Character	Yes	No ⁽ⁱ⁾	Dunn and Doria (2010)	Attractiveness	40	Interest	Yes	Yes
Deng and Zheng (2015)	Attractiveness	76	Interest	Yes	Yes	Little et al. (2008)*	Attractiveness	35	Masculine/ Feminine	Yes	No ⁽ⁱⁱ⁾
Dunn and Doria (2010)	Attractiveness	40	Interest	Yes	Yes	Little et al. (2011a)*	Attractiveness	42	Masculine/ Feminine	Yes	No ⁽ⁱⁱⁱ⁾
Jones et al. (2007)	Attractiveness	28	Expressions	Yes	No ⁽ⁱ⁾	Little et al. (2011b)*	Attractiveness	32	Masculine/ Feminine	Yes	No ^(iv)
Little et al. (2008)*	Attractiveness	51	Masculine/Feminine	Yes	No ⁽ⁱⁱ⁾	Place et al. (2010)*	Interest	40	Interest	Yes	No ^(iv)
Little et al. (2011a)*	Attractiveness	36	Masculine/Feminine	Yes	No ⁽ⁱⁱⁱ⁾	Vakirtzis and Roberts (2010)*	Willingness	40	Attractiveness	No	No ^(iv)
Little et al. (2011b)*	Attractiveness	21	Masculine/Feminine	Yes	No ^(iv)	Vakirtzis and Roberts (2012a)*	Questionnaires	175	Attractiveness	No	No ^(v)
Little et al. (2015)*	Attractiveness	174	Popularity	Yes	Yes	Yorzinski and Platt (2010)	Attractiveness	30	Attractiveness	Yes	Yes
Place et al. (2010)*	Interest	40	Interest	Yes	No ^(iv)						
Vakirtzis and Roberts (2010)*	Willingness	40	Attractiveness	Yes	No ^(iv)						
Vakirtzis and Roberts (2012a)	Questionnaire	175	Attractiveness	Yes	No ^(iv)						
Vakirtzis and Roberts (2012b)*	Willingness	53	Attractiveness	Yes	No ^(v)						
Waynforth (2007)	Attractiveness	112	Attractiveness	Yes	Yes						
Yorzinski and Platt (2010)	Attractiveness	30	Attractiveness	Yes	Yes						
Backward Search Sources											

Backward Search Sources

Table 2 (continued)

Female Choice						Male Choice					
Source	Measure	Sample N ^o	Trait Augmented	MCC meta-analysis	Source	Measure	Sample N ^o	Trait Augmented	MCC meta-analysis	MCC	meta-analysis
Bar-tal and Saxe (1976)	Attractiveness	64	Attractiveness	Yes	No ⁽ⁱⁱⁱ⁾	Bar-tal and Saxe (1976)	Attractiveness	64	Attractiveness	Yes	No ⁽ⁱⁱⁱ⁾
Meiners and Shepesh (1977)	Overall impression	100	Attractiveness	Yes	No ⁽ⁱⁱⁱ⁾	Strane and Watts (1977)	Attractiveness	30	Attractiveness	Yes	No ⁽ⁱⁱⁱ⁾
Bressan and Stranieri (2008)	Attractiveness	208	Masculine/Feminine	Yes	No ⁽ⁱⁱ⁾						
Sigall and Landy (1973)	Attractiveness	28	Attractiveness	Yes	No ⁽ⁱⁱⁱ⁾						

- (i) Methodology not comparable: Side by side comparisons
 - (ii) Sufficient data not provided: SD not provided, cannot be determined from report or be estimated by similar studies
 - (iii) Sufficient data not provided: Results not separated by participant sex
 - (iv) Sufficient data not provided: 'Shift' in ratings of targets alone to targets with others reported; no means or SDs were provided or could be determined from report
 - (v) Methodology not comparable: Series of Questionnaires
- *Authors contacted and either did not have the data or did not respond

study designs (Hedges et al. 1999). For example, the number of stimulus photos/models used varies between studies with fewer stimuli creating less variability compared to studies with more stimuli (higher variability is created). This is because the higher the number of stimuli, the more variability is created via the choice outcomes. *InRR* counteracts this and allows us to calculate effect sizes fairly.

We also calculated the estimate of the sampling error variance (also referred to as within-study variance) of *InRR*, the inverse of which serves as weights in meta-analyses. Each within-study variance was calculated by taking into account the (non) independence of study design (e.g. repeated measured design) according to Nakagawa and Cuthill (2009) and Noble et al. (2017).

Statistical Analyses

All statistical analysis was performed in the R environment (Venables and Smith 2005). Separate analyses were carried out for the manipulations of addition and augmentation. Further, separate analyses were carried out for male and female subjects (as rated by opposite-sex participants). This constituted a total of 4 separate analyses i.e. (i) Female Choice/ ‘addition of female cues’ (ii) Male Choice/ ‘addition of male cues’ (iii) Female Choice/ ‘augmentation of female cues’ (iv) Male Choice/ ‘augmentation of male cues’. For spreadsheet refer to Online Resource 2–5.

Publication bias was also examined by performing a ‘Trim and Fill’ analysis using the *trimfill* function in *metafor*. A trim and fill analysis assesses how much bias may potentially impact a meta-analysis and estimates what the effect size would be in the absence of bias (Duval and Tweedie 2000a). It does this by removing the smallest studies (trimming) and recomputing an adjusted effect size (filling) until there is symmetry; which theoretically yields an unbiased estimate of the effect size (Duval and Tweedie 2000b). We only performed this on model (i) as it had a sufficient sample size (i.e. >10) to allow us to perform the analysis while (ii)-(vi) did not (i.e. <10) (Higgins and Green 2008).

Results

Overall Numbers Using the Counting Method

The majority of studies published (16 out of 18 i.e. 89%) reported an increase in attractiveness/desirability among males presented with a female (‘addition’ of female cue) while 5 out of 7 (71%) published studies reported an increase in attractiveness/desirability when females were in the presence of a male i.e. ‘addition’ of male cue (Table 1). The dominant method of measuring MCC was ‘rated attractiveness’; however the 2 studies that did not detect MCC effects in male choice measured ‘desirability’ (Hill and Buss 2008) or asked questions regarding real life experiences (Vakirtzis and Roberts 2012a). None of the unpublished sources detected mate choice copying in either male or female choice.

Interestingly, 100% of papers reported an increase in attractiveness/desirability when males were in the presence of females with favorable characteristics i.e. ‘augmentation’ of female cue (Table 2). As we did not have any unpublished sources, this may reflect a

publication bias. In regard to studies implementing ‘augmentation’ of male cues; 9 out of 11 papers (82%) report an increase of attractiveness/desirability when female targets were in the presence of males with favorable characteristics (Table 2).

Meta-Analysis

We assumed that there existed non-zero between-study variance, and as such, random-effects meta-analytic models (RMA) were fitted for models (i) – (iii). Even though RMA would provide more conservative results; we carried out a fixed-effect meta-analytic model (FMA) for model (iv), as there were not enough samples for the model to have random effects. All these analyses were undertaken using the *rma* function in the package *metafor* (Viechtbauer 2010). Further, in models (i) – (iii), we used restricted-maximum likelihood (REML) to estimate unbiased variance components and heterogeneity statistics (I^2 which is the ratio between the between-study variance and the total variance, i.e. between and within-study variance); note that a typical within-study variance is estimated following the method in Higgins and Thompson (2002). Statistical significance was inferred at $p < 0.05$. Heterogeneity (I^2) was classified with values of 25, 50 and 75 to denote low, medium and high respectively (Higgins et al. 2003).

In regard to $\ln RR$ values, it must be noted that this is calculated as the natural logarithm of (*mean treatment / Mean control*). If a final model estimate value is ‘0’, then the 2 groups have the same mean. A value of, for example, ‘0.1’ suggests that the ‘treatment’ group has an approximately 10.51% higher mean while a value of ‘-0.1’ suggests that the ‘control’ has an approximately 10.51% higher mean.

Meta-Analysis (I) the ‘Addition’ of a Female Cue: Female Choice

The model estimate showed that the treatment group had a significantly higher mean than the control (0.058; Table 3.i) suggesting that males in the company of females are seen as more desirable by women than when they are alone. The positive mean revealed that men are rated 6.01% more attractive/desirable when in the presence of a female. Individual effect sizes and confidence intervals on the forest plot (Fig. 2a) appear to vary considerably and we detected high heterogeneity amongst these effect sizes ($I^2 = 88.38\%$; Table 3.i), suggesting that variables such as methods, effects of participant and sample characteristics may be contributing to the high variability between experiments.

Table 3 Models run to test for the prevalence of mate choice copying effects regarding female choice (i and iii) and male choice (ii & iv)

Model	Effect Sizes	Model Run	Model Results		Test for heterogeneity (I^2)	
			Estimate	P Value	I^2	P Value
i	17*	Random	0.058	<0.05	88.38	< 0.0001
ii	7	Random	-0.022	0.377	37.01	0.286
iii	5	Random	0.113	< 0.001	6.59	0.443
iv	2	Fixed	0.1293	<0.05	–	0.787

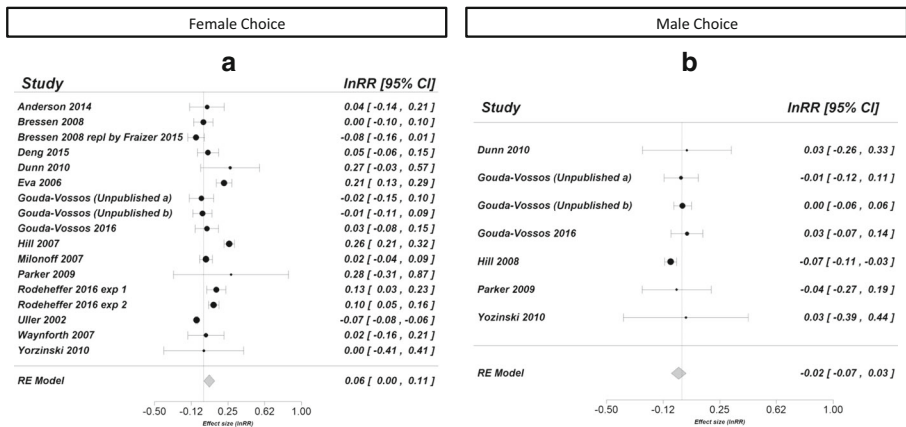


Fig. 2 Forest plots of effect sizes ($\ln RR$) plotted against studies for **a** Female choice/Female addition; meta-analysis i **b** Male Choice/Male addition; meta-analysis ii (created in R)

Trim and Fill Analysis for Meta-Analysis (I)

The trim and fill analysis produced 3 corrected effect sizes from 3 estimators i.e. R0, L0, and Q0 (Table 4) with the corrected effect sizes of “L0” and “Q0” being significant; suggesting the studies to be robust. This is not surprising as estimators “L0” and “Q0” have been documented to behave similarly (Duval and Tweedie 2000a). However, the trim and fill analysis for the “R0” estimator revealed possible publication bias as 3 studies were missing and it needed to ‘filled’ plus the corrected effect size was non-significant and almost half the original effect size (i.e. 0.032; 3.3%; Table 4). It should be noted that in a series of simulated tests, “L0” and “R0” are considered to perform better than “Q0” (Duval and Tweedie 2000b) and using “R0” is considered advantageous as it also provides a test of the null hypothesis that the number of missing studies (on the chosen side) is zero (Duval 2006). Taking all into consideration, the sensitivity analysis suggests that the impact of bias is probably modest. Further, the corrected effect sizes show that the key finding (i.e. men rated as more attractive when in the presence of females) remains relatively unchanged. However, the presence of high heterogeneity (> 80%; Table 4) across all 3 tests suggests that there is also a lot of unaccounted variance between studies.

Table 4 Trim and fill analysis for model (i)

Estimator	# Missing Studies	Model Results		Test For Heterogeneity (I^2)	
		Model Estimate	p-value	I^2	p-value
Original	—	0.058	< 0.05	88.38	< 0.0001
LO	0	0.058	< 0.05	85.38	< 0.0001
RO	3	0.032	0.298	91.43	< 0.0001
QO	0	0.058	< 0.05	88.38	< 0.0001

Meta-Analysis (Ii) the ‘Addition’ of a Male Cue: Male Choice

The RMA found a non-significant negative effect (-0.022 ; Table 3.ii) corresponding to a difference of 2.18% in attractiveness between women presented with a man, compared with alone, although this association was not significant (Table 3.ii). We also detected low to medium heterogeneity (37.01%; Table 3.ii) suggesting a higher level of consistency between sampling methods or effects than the ‘addition of male cues’ studies (meta-analysis (i)). However, this effect may have been driven primarily by the large effect size extracted from Hill and Buss (2008) (Fig. 2b). When this effect size was dropped and RMA was re-run, the overall negative effect was lost but was still not significant (model estimate = 0.0062; $p = 0.786$; Online Resource 8) suggesting that the original negative effect was most likely driven by one study (Hill and Buss 2008) and that there is no consistent strong effect of a male addition to women’s attractiveness. Further, heterogeneity after the Hill and Buss (2008) effect size was removed was virtually non-existent ($I^2 = <0.0001\%$; $p = 0.994$) suggesting a high level of consistency between sampling methods or effects in the remaining studies.

Meta-Analysis (Iii) the ‘Augmentation’ of Female Cue: Female Choice

According to the model estimate of the RMA (Table 3.iii), the treatment group had a higher mean than the control group suggesting that women rate men as more attractive/desirable when they are in the presence of other women with more favorable characteristics. The positive effect revealed that women rate men 12.1% more attractive/desirable when in the presence of women with favorable characteristics. Despite the various characteristics utilized across studies (Fig. 3a), among-study variability was very low (a heterogeneity of $I^2 = 6.59\%$; $p = 0.443$) suggesting a high level of consistency between sampling methods or effects.

Meta-Analysis (Iv): The ‘Augmentation’ of Male Cue: Male Choice

Although the sample was very small ($n = 2$), both studies suggest women are rated as more attractive when in the presence of a male with favorable characteristics (Fig. 3b).

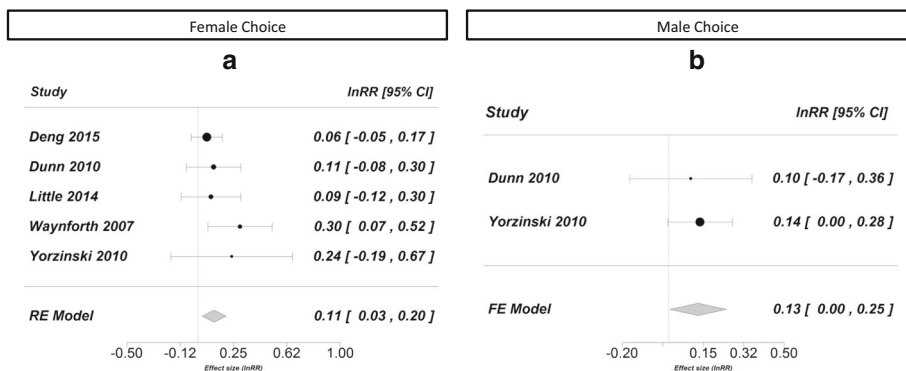


Fig. 3 Forest plots of effect sizes ($\ln RR$) plotted against studies for **a** Female Choice/Female Augmentation iii and **b** Male Choice/Male Augmentation iv (created in *R*)

When run through a FEM, model estimates suggested that women were rated 13.8% ($p < 0.05$) more attractive when in the presence of males with more favorable characteristics (Table 3.iv).

Discussion

The systematic review and meta-analyses regarding ‘addition of cues’ MCC experiments revealed that women were more likely to alter their ratings of males in a way consistent with copying and sex differences in mate choice than men were to alter their ratings of women. However, the meta-analysis also revealed that when the mate quality of the stimulus is high, both men and women respond similarly providing support for the notion that the perceived preference of higher quality mates is copied to a greater extent than lower quality mates. Additionally, the results suggest that we cannot eliminate the possibility of mate choice copying effects among men choosing women.

It should be noted that the majority of studies that report ‘addition of cue’ MCC effects for male choosers measured rated attractiveness, whereas the studies that did not find MCC effects measured desirability (Hill and Buss 2008) and self-reported questionnaires (Vakirtzis and Roberts 2012a). Unlike rated attractiveness, these measures suggest the process of acting upon the evidence of another person’s sexual interest rather than merely rating targets from a safe distance from potential competitors. When prompted to act on the choice (e.g. willingness to date) men may not give higher scores to target females due to reluctance to engage in any intra-sexual competition or fear of rejection. Conversely, this does not appear to be a deterrent for women, as they consistently rate the attractiveness of male targets higher when in the presence of a female.

Similar to the results of ‘addition of cues’ MCC studies, it is possible that men’s increase in attractiveness response toward females with attractive opposite-sex others may be driven by competitive behavior. Eye-tracking studies have shown that men allocate more visual attention towards attractive male targets than less attractive male targets (DeWall and Maner 2008; Yorzinski and Platt 2010). Yorzinski and Platt (2010) also reported that men shifted their gaze between target females and the attractive males they were presented with. Further, a recent study by Winegard et al. (2017) found that men were more focused on signalling the quality of their female mates to other men than to other women in an attempt to signal higher status. These studies reflect that men were focusing on higher quality males due to intra-sexual competition, wherein the formidability of a potential rival in mate competition is assessed relative to the quality of a potential mate. It is possible that in these types of MCC experiments (i.e. augmentation of cues), male participants were focusing on rival males with potentially high quality or formidability and may infer that the paired female must also be of high quality. As such, men may be more willing to engage in competition if the outcome is more desirable and the increase in attractiveness/desirability of target female may be symptomatic of that response; however this has not been tested directly.

The amplification of attractiveness/desirability ratings from women towards target males with high quality opposite-sex others was not surprising. Within a natural setting, mate choice copying is thought to occur when it is hard to discriminate between high- and low-value mates (Nordell and Valone 1998; Pruett-Jones 1992) and when the

benefits of doing so outweigh any potential costs (i.e. physical competition) (Dubois 2007). This is especially true for female choice as men's mate value involves assessing status beyond physical formidability (Geary et al. 2004); with the observed preferences of highly desired females being highly valued social information. By copying the preference of highly desired females, women could avoid substantial costs associated with directly searching and choosing a potential mate.

A few older studies have found that level of attractiveness of individuals within a couple influences personality judgments from onlookers (Bar-tal and Saxe 1976; Insko et al. 1973), with men ascribed more positive personality traits when paired with attractive women (Hartnett and Elder 1973). In contrast, personality traits of women are less likely to be influenced by the attractiveness of opposite-sex others (Insko et al. 1973); and more so by their own attractiveness. Taken together, it appears that men may benefit more than women from being presented with opposite sex others, especially if the 'others' are highly attractive; although, little is known as to how effective mate choice copying is as a reproductive strategy in men. By assessing the attitudes associated with mate choice copying, we may possibly gain a clearer understanding of how (or if) MCC leads to access to potential mates.

Limitations: Replication Issues and Potential Publication Bias.

Even though our meta-analyses did detect positive shifts in attractiveness/desirability in 'addition of cues' studies amongst women choosing men (i.e. meta-analysis (i)); the high level of heterogeneity and the results of the trim and fill analysis suggests that not only is there a lot of unaccounted variation between studies, but there may possibly be a moderate publication bias in favour of positive reports of mate choice copying. Further, the systematic review uncovered a possible file drawer effect in 'augmentation of cues' studies for female choice, as virtually no study reported non- significant results in MCC. In the light of the replication crisis in psychology (Baker 2016; Simmons et al. 2011; Stroebe and Strack 2014), the likelihood of the null hypotheses being unfairly rejected (type 1 error) may be higher than acceptable in our meta-analyses.

Mate choice copying is still relatively new to researchers studying human mate choice with no clear standardized method and considerable ambiguity regarding the classification of human MCC. As a result, more recent studies measuring MCC effects appear to be deviating from what traditionally constitutes a MCC effect (i.e. individual accepting a mate increasing when that mate has been seen, or inferred to have been chosen as a mate by others) and measuring suggestive factors such as attractiveness ratings from other people (Street et al. 2018) or popularity of the individual (Little et al. 2015). This is because it is difficult to know whether what is being characterized as MCC is merely the social transfer of mate preferences or the social transfer of attractive features (Sigall and Landy 1973; Vakirtzis 2011). Additionally, in non-human MCC studies; experimental methodologies (Dugatkin and Godin 1992; Galef et al. 2008; Galef and White 1998; Laffleur et al. 1997), the type of cue that reflects real mate choice (Dugatkin 1996a; Kraak 1996; Pruett-Jones 1992), and technical definition of copying (Kraak 1996) are heavily debated topics. It appears that human-focused studies have inherited the variation from non-human studies without the debate or disagreement, resulting in little consistency from study to study, making replication and comparison of results very complicated.

In order to understand the true nature of MCC, the non-human MCC literature may be able to provide assistance. For instance, MCC studies in humans only provide information at the pre-copulatory level, as no mating occurs (unlike MCC studies in non-human animals). True mate choice copying involves a copier interacting and possibly mating with the target of mate choice (Kraak 1996). Mate choice copying studies in humans do not assess this; however, studies in mate poaching and trait-based MCC may shed some light on the true nature of mate choice copying in humans.

Future Directions: Mate Choice Copying and Mate Poaching.

Mate poaching involves intentionally attracting an individual that is already in a romantic relationship (Davies et al. 2007; Schmitt and Buss 2001; Schmitt and Members Int Sexuality D 2004). Women report feeling more threatened than men do when their partner's physical appearance is complemented (Brown et al. 2014), while partnered men are more likely than partnered women to have extra-pair mates (Petersen and Hyde 2010; Schmitt and Members Int Sexuality D 2004). Tidwell and Eastwick (2013) also found that men (compared to women) in relationships were more willing to 'succumb to temptation' if a women attempted to poach them. Collectively, these results suggest that women should be more successful at poaching than men. However, previous studies have found that men in relationships were more likely to commit violent acts towards their partner and extra-pair mates (Buunk and Hupka 1987; Daly et al. 1982); which should theoretically restrict men and women from poaching, but paradoxically does not (Schmitt and Members Int Sexuality D 2004).

In a recent chapter by Adair et al. (2017) exploring the circumstances where mate poaching would take place rather than copying suggested that poaching would become more likely (in women) when there are no additional males of similar quality. When considering the results of the current meta-analysis, the likelihood of poaching may be correlated with the likelihood of copying (i.e. when female mate quality is high). If that is true, then the meta-support we report for MCC might be part of the psychological suite of adaptations for mate poaching. Studies of mate poaching behavior should take heed of the evidence of mate choice copying and the prediction that it might be part of the poacher's repertoire.

Future Directions: Trait-Based Copying

Throughout the current study, we have referred to one type of mate choice copying (i.e. individual-based copying). Another form of MCC involves selecting features or traits that are similar to those observed in a target (i.e. *someone like you*), which is termed 'trait-based copying' (Bowers et al. 2012; Dugatkin 1996b). A small number of studies have shown women that observe males coupled with attractive females (Little et al. 2008) or males receiving positive attention from females (Bowers et al. 2012), subsequently rate the attractiveness of males with similar traits higher than men with dissimilar traits of the original target. Traits ranged from facial features i.e. eye spacing (Little et al. 2011b) to clothing (Bowers et al. 2012).

This kind of copying is potentially important as it can change not only a mate-choice decision, but a long-term preference that might influence the strength of sexual selection on male traits (Gibson and Hoglund 1992; Kirkpatrick and Dugatkin 1994;

Wade & Pruett-Jones 1990), influence cultural evolution (Brooks 1998; Westneat et al. 2000), and feed into frequency-dependent preferences (Nordell and Valone 1998). Additionally, it is not clear if men engage in trait-based copying as they do with individual-based copying. While measuring trait-based preferences may be complicated, both Little et al. (2008) and Bowers et al. (2012) have shown it to be possible. Further, more need to be done to distinguish the two forms of mate choice copying as they may have differential consequences within populations.

Concluding Remarks

The current review and meta-analysis provides some support for the existence of mate choice copying effects within the limited experimental contexts that researchers have been able to ethically exploit. We have also, by considering the kinds of experimental approaches used, resolved the reasons for some of the among-study variation, particularly in studies where men rate women. Our search of the published research, particularly those studies preceding the advent of the term ‘mate choice copying’ in animal research, has demonstrated history of researching the same question under a variety of different names. The notion of ‘mate choice copying’ has newsworthy appeal and may be the kind of result that is considered more remarkable when significant affirmative evidence is found than when negative evidence is found. We urge researchers, referees and editors evaluating tests of mate choice copying in humans to both consider the differences between stimulus types we have outlined here, and to approach the possibilities of Type I and Type II errors with matching caution and skepticism in order not perpetuate file drawer effects or publication biases.

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Compliance with Ethical Standards

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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First_Author	Mean_without	SD_without	Number_without	Mean_with
Anderson 2014	3.04	1.55	123	3.15
Bressen 2008	5.29	1.71	52	5.28
Bressen 2008 replicate by Fraizer 2015	4.76	1.71	263	4.41
Deng 2015	3.659	0.98	90	3.83
Dunn 2010	5.08	4.136	40	6.67
Eva 2006	2.96	0.58	38	3.65
Gouda-Vossos (Unpublished a)	45.76	20	62	44.78
Gouda-Vossos (Unpublished b)	56.27	21.36	113	55.6
Gouda-Vossos 2016	43.95	21.06	121	45.46
Hill 2007	3.63	1.172	159	4.72
Milonoff 2007	4.41	0.9	67	4.52
Parker 2009	0.3983	0.5859	97	0.5269
Rodeheffer 2016 exp 1	3.43	0.86	30	3.905
Rodeheffer 2016 exp 2	3.7	0.63	47	4.1
Uller 2002	4.185	0.13	97	3.905
Waynforth 2007	3.65	2.11	112	3.74
Yorzinski 2010	3.84	2.12	30	3.85

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SD_with	Number_with	Design	No_of_Stim
1.52	121	Within	5
1.5	156	Between	12
1.5	263	between	12
0.98	90	Within	50
3.54	40	Between	12
0.55	38	Between	10
19.85	197	Between	9
21.71	128	Between	12
21.02	122	Between	18
0.656	159	Between	10
0.82	71	Between	10
0.7827	97	Within	1
0.64	74	Between	7
0.49	97	Between	7
0.125	97	Between	2
1.51	112	Within	112
2.27	30	Within	36

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First_Author	Mean_without	SD_without	Number_without	Mean_with	SD_with
Dunn 2010	5.531	3.051	20	5.71	2.179
Gouda-Vossos (Unpublished a)	58.77	18.16	38	58.44	18.34
Gouda-Vossos (Unpublished b)	68.72	18.64	162	68.9	17.32
Gouda-Vossos 2016	50.81	23.07	132	52.49	21.69
Hill 2008	5.41	0.998	123	5.02	0.665
Parker 2009	1.02	0.516	87	0.984	0.5735
Yozinski 2010	3.92	2.29	30	4.02	2.29

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Number_with	Design	Number of Stimuli/Images Used
20	Between	12
123	Between	9
141	Between	12
128	Between	17
123	Between	10
87	Within	1
30	Within	36

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First_Author	Mean_negative	SD_negative	Number_negative	Mean_positive	SD_positive
Deng 2015	3.6	0.98	90	3.83	0.98
Dunn 2010	5.31	2.5	40	5.93	2.36
Little 2014	3.24	3.35	174	3.55	3.4
Waynforth 2007	3.056	2.11	112	4.11	2.11
Yorzinski 2010	3.3	2.12	30	4.18	2.31

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Number_positive	Design	No_of_Stim
90	Within	120
40	Between	12
174	Between	20
112	Within	112
30	Within	36

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First_Author	Mean_without	SD_without	Number_without	Mean_with	SD_with	Number_with
Dunn 2010	5.24	1.98	20	5.77	1.37	20
Yorzinski 2010	3.76	2.31	30	4.31	2.31	30

Design	Number of Stimuli/Images Used
Between	12
Within	30

Subject	1a	1b	1c	1d	2a	2b	2c	2d	3a
7			50						35
8		35					30		50
9					55	35			
10			45			15			60
12		25					25		
13		25						5	
18					60				40
22			40				15		
25			15						55
26			25			40			
27			40			40			
28				50					35
29		65						45	45
30		50				40			
31				30				40	
32			60				40		60
34					75				35
35			40					50	
37		50						15	
38				45					20
43				65			75		
44		50				15			45
45			55					55	
50					35		10		
51			50				30		
60				40				45	
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65		60				65			65
66					60		50		
68				55			45		45
73				30			20		
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75		20					15		
76		70					30		
81				50		45			40
86			20				10		
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90			45					25	25
94				45			30		55
96					25	20			
97					40				35
99				55					10
102				60					45
103				30				20	60
105					20		30		
107					55		65		55
108				5				25	

109				60	45			
111			0.1			20		
117				55			50	
120	10					20		
121				10	5			
124		20				55		
125		50					25	30
129		60					35	
130				50		30		
133	20				35			
139			40		80			
140				30			5	5
144				5		5		20
145		45				40		45
146	25					10		
149			15		10			
150	50					35		
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162				30	20			
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165		55				15		
166			45				30	
167		60				50		
168	50					50		50
169		75			15			30
172			55				45	
175			45				20	
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178	80					40		
179			30		20			30
180			10			15		
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188		0.1					0.1	
191	30						60	
192	30					0.1		
193		65			50			60
194			30			30		25
196		45				35		45
197		40			10			
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201		50				45		
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206			60			55		
207	55						55	

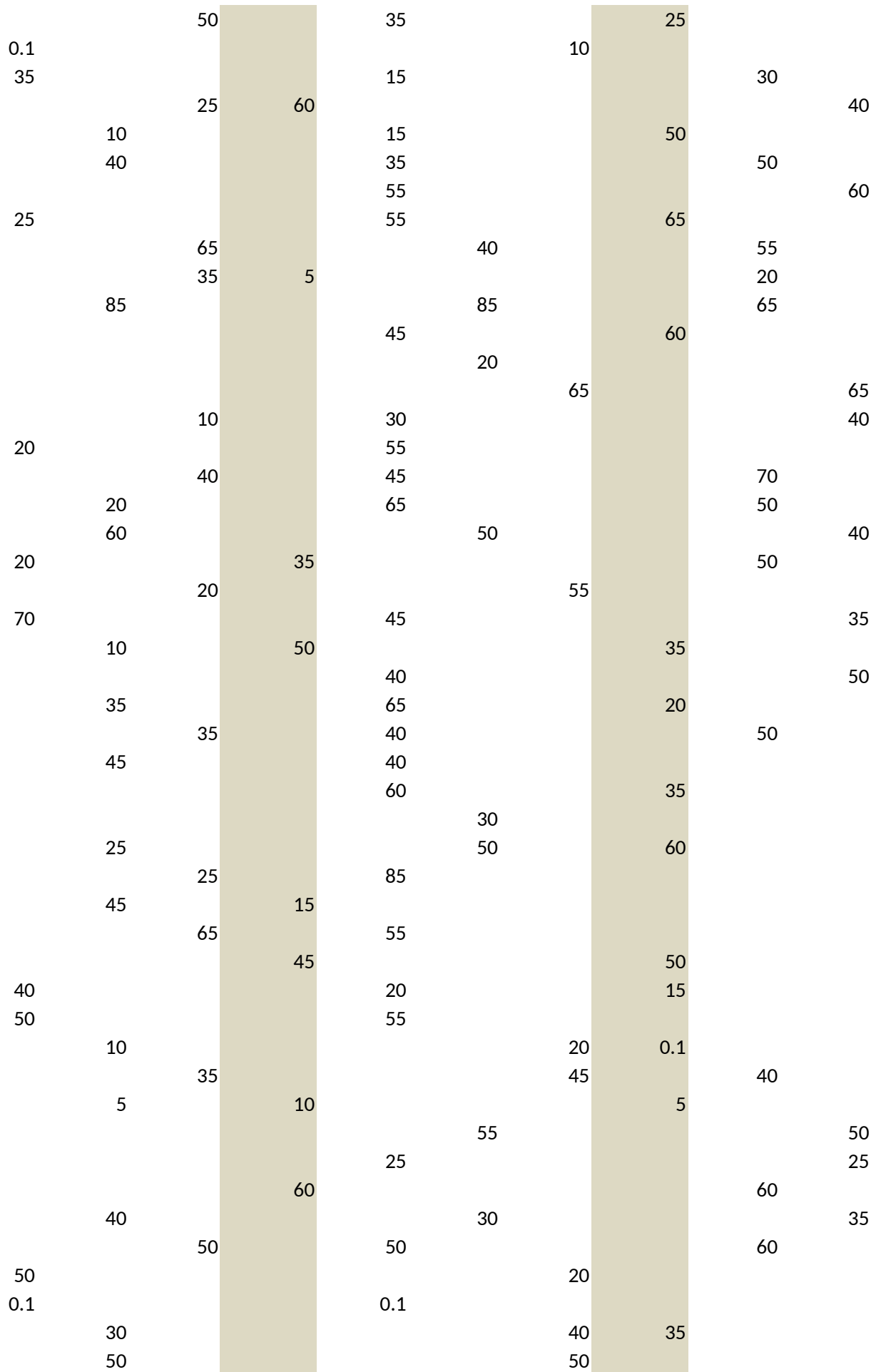
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229			40				25
230			10				5
236				70		40	
241				45	40		
242			0.1		0.1		
243		40			40		
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254				35		35	
262				5		10	10
263			30				40
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266	25						5
268				65	50		
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270			55		25		
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275	30						30
278	10					15	
279				25	40		
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281			0.1		0.1		0.1
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287				25			25
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297			40				40
298				80			50
299			60		20		
303				30		35	
304	55					40	
308			65				55
309	35						35

311		30		10		
313	50				20	
315		55			40	
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319			55	35		40
320				55	35	
325	65					55
328				25		60
330				5		5
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335		20			15	
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338		35		70		25
340				35		30
343				50		50
345		40		25		
347			15		5	
348	40				15	
349				15		15
350	75				50	80
355			45			60
359				15		5
360			40			70
361				35	35	
363		65				60
365	30					
368				55		30
369				55		45
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378	25			30		
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381		45				45
383				50		30
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393				45	10	20
396			30		30	30
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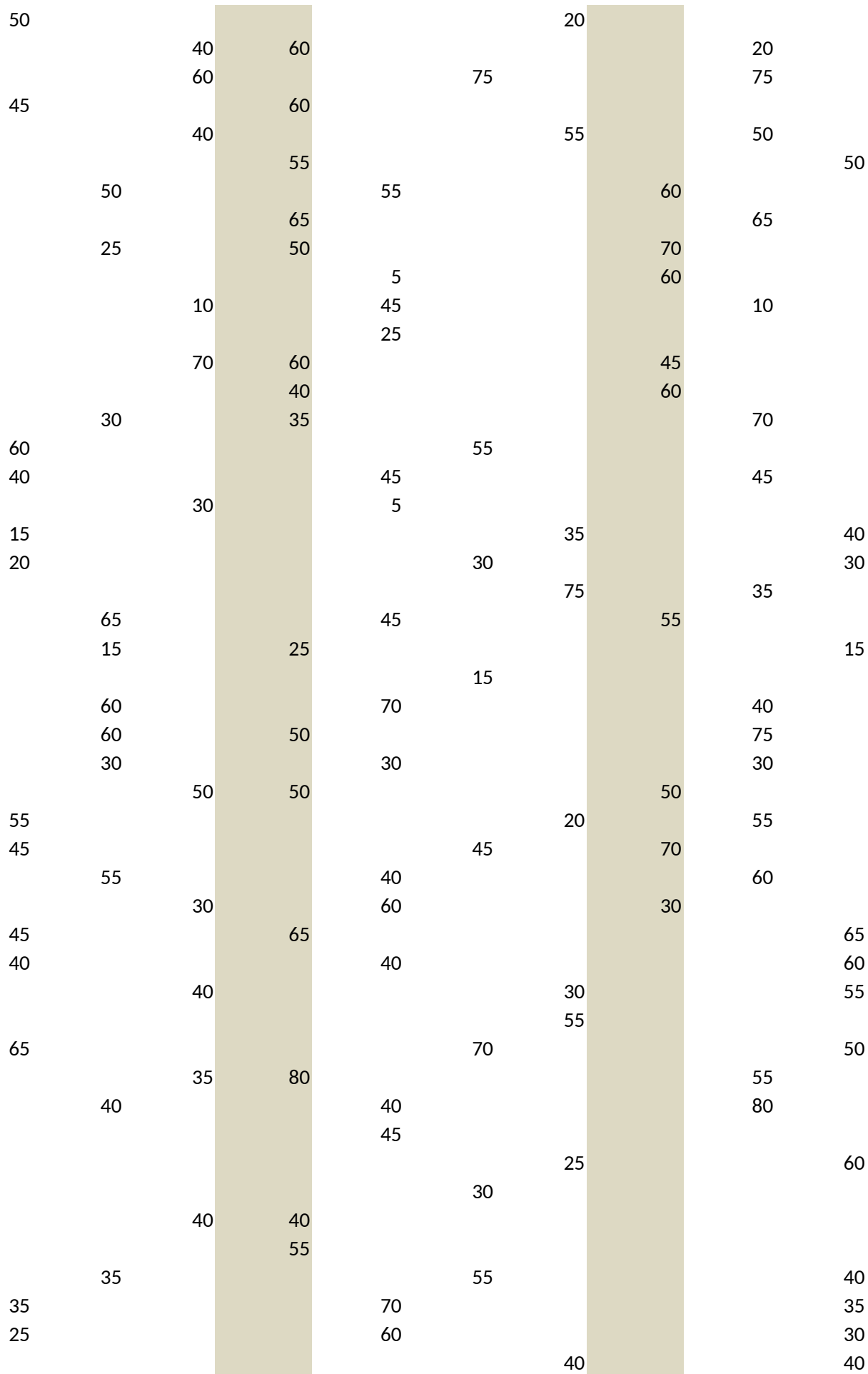
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441			50			55		
445				20	10			
447		70			55			
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451			60		60			60
454			10				10	
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465		55				15		
470			10				5	30
475	40							40
476			15		20			
477		40				55		
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486	25					25		
487	50							
492				70		60		
493		60				10		
496	40					55		40
498			45		30			40
503	75						35	
504		0.1			10			
509	40						55	
512	55				35			
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518		65						80
519			50				50	45
521	50						40	55
523		35					15	10
525			30		15			10
526	55						60	60
529	60							20
531			20				20	
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539		10				5		
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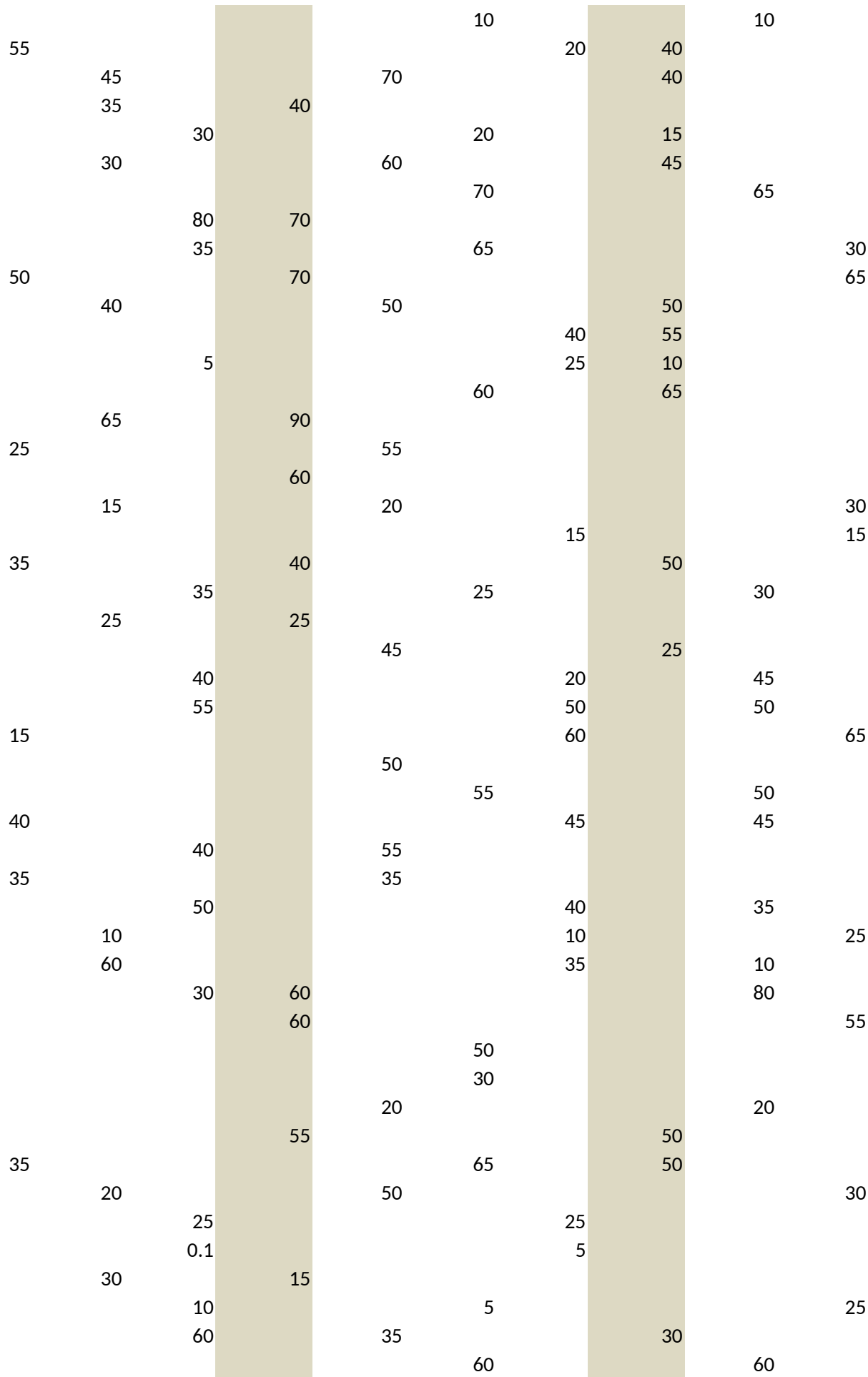
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	568	60							20	
	570				60	30				
	575				55		40			
	576				60				45	55
	578	20						65		65
	580	25					50			75
	585		35					35		
	586		65					60		
	587	25				25				
	589		50						40	
	592	60					45			
	595	80					20			
	596	75							60	
	597			10				10		
	598	40					60			
Count		64	64	74	58	59	68	78	55	63
Average		45.390625	45.2375	36.62838	42.15517	31.10678	33.45882	35.25641	34.72909	42.066667

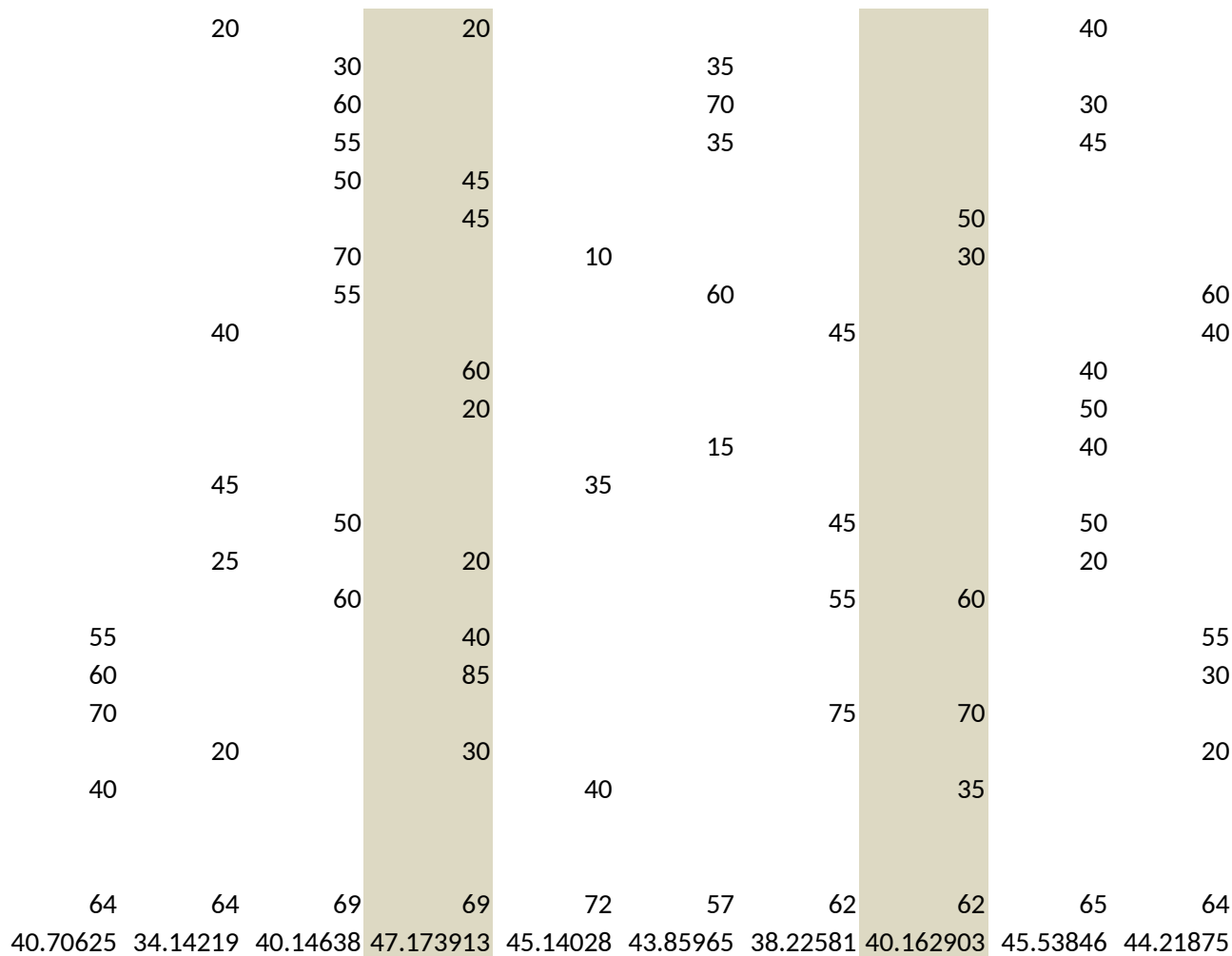
3b	3c	3d	4a	4b	4c	4d	5a	5b	5c
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			45	65					55
		55		65				30	
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15						15		35	
	10					55			
55						60			
			10	30				55	
60							25		
55				75				30	
			45		40				25
						55			50
55				55					25
			45				50		50
45					55				35
							50		
			50		45				55
	60			75					
			20		45				50
	35				70				65
	20					75			65
					60				20
	40			55				50	
			10			40		30	
			50			55			
	30					45		30	
			30		70				50
				40					
			60		60				
							50	35	
	5						5		
				20					55
	25				65				60
50					70			15	
				35				30	
15				40					
						60			80
				65			35	30	
									5
	25			35					40
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			30			50			
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			25				15		50



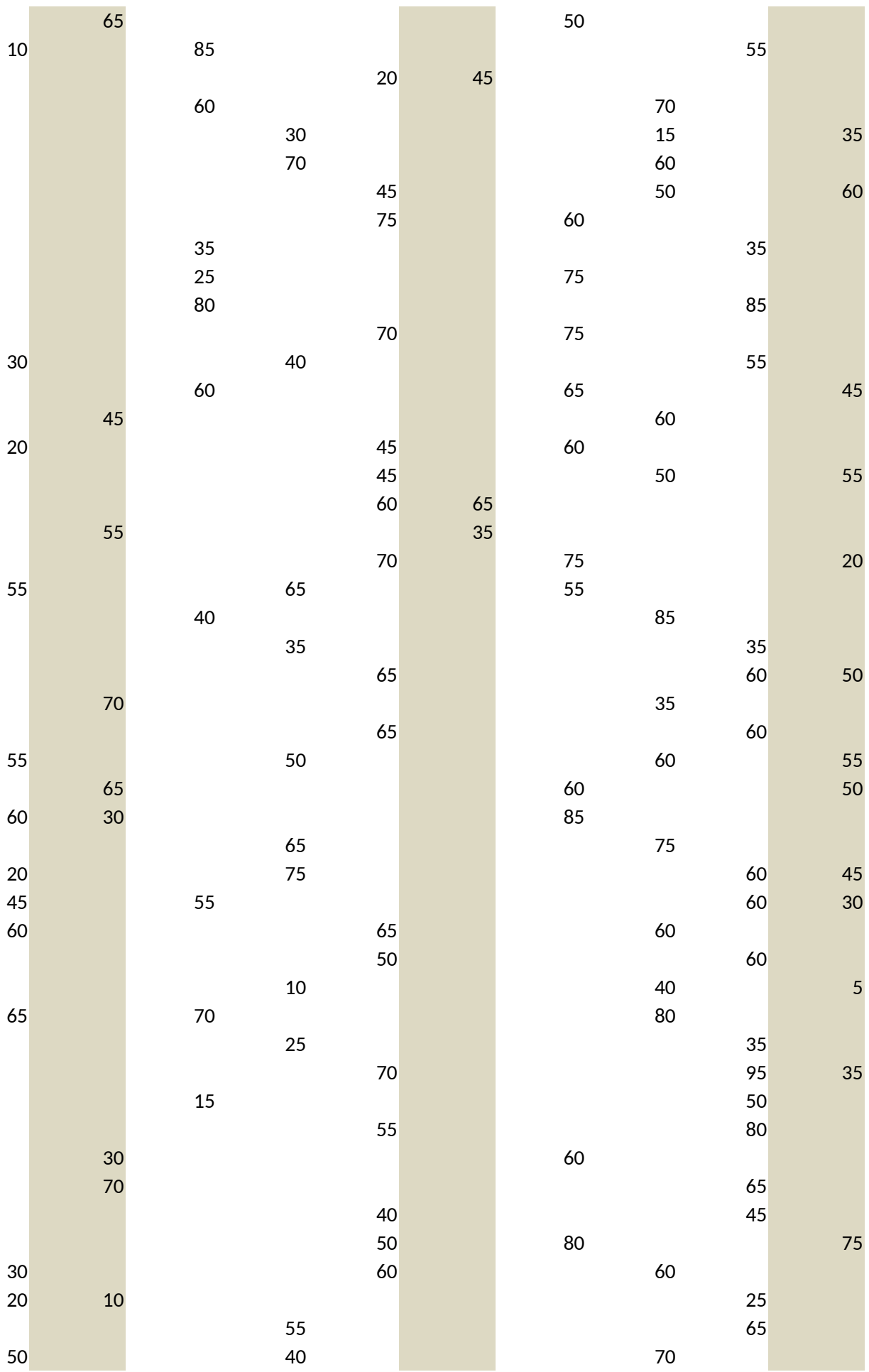
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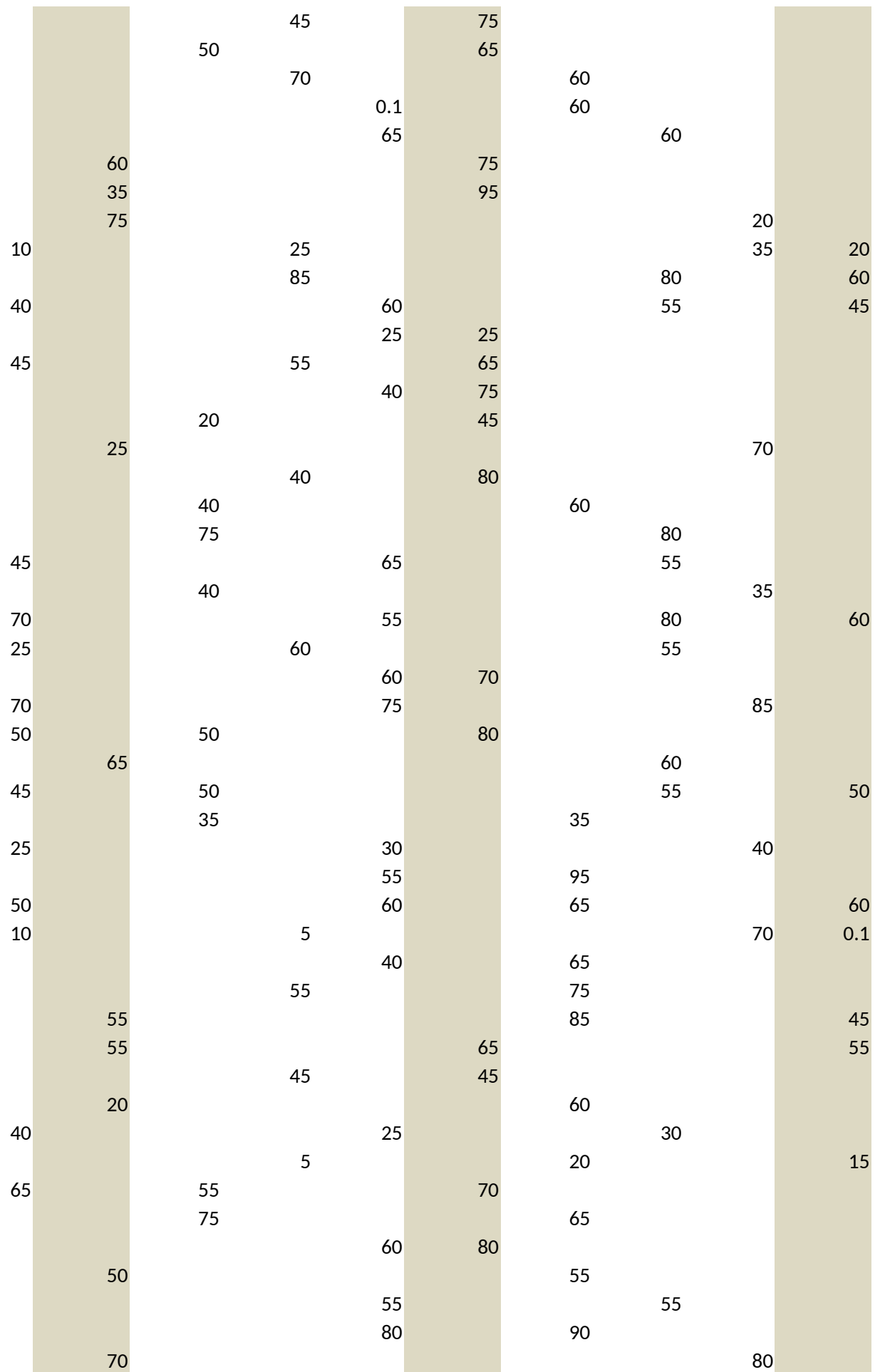


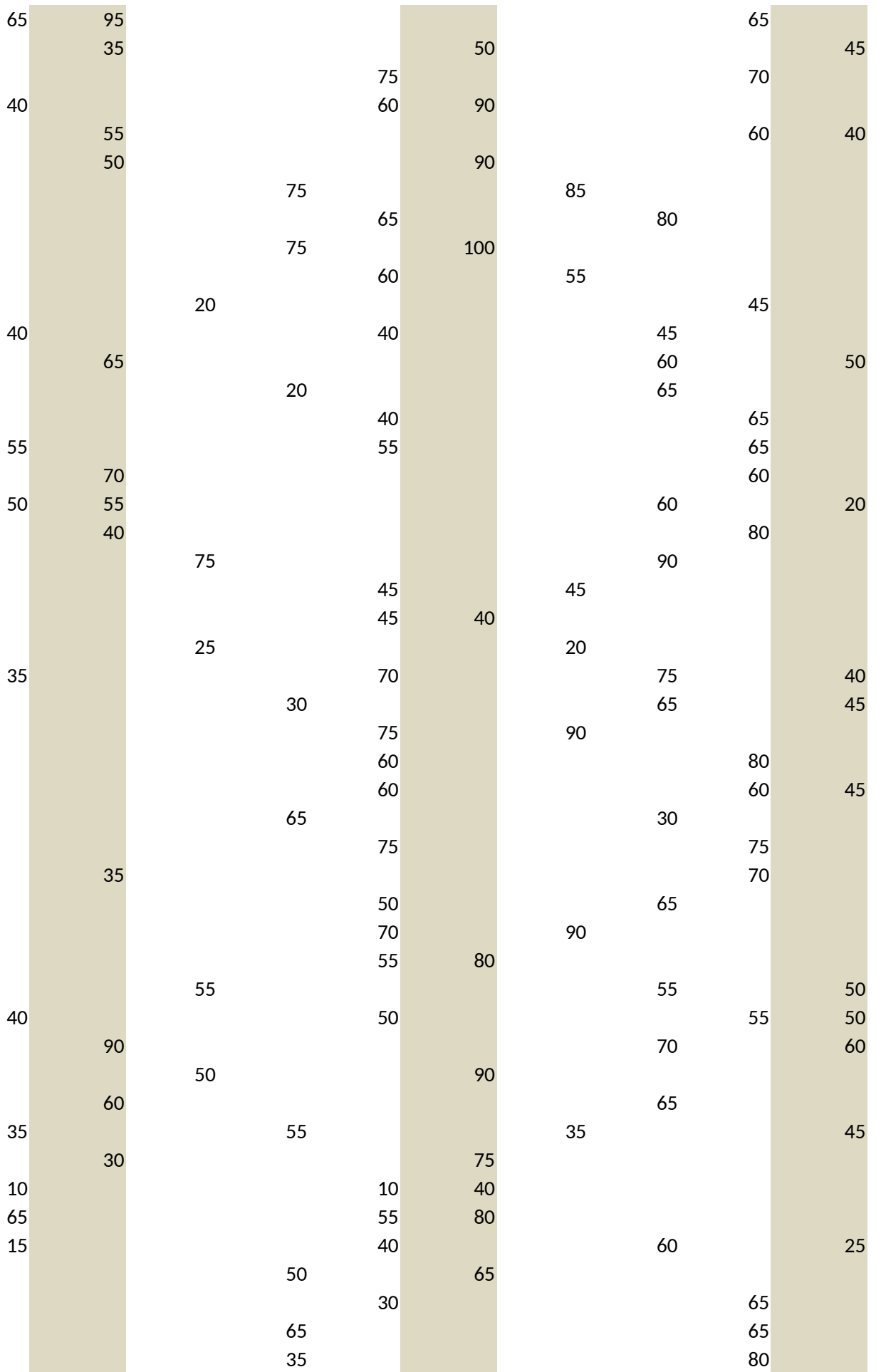


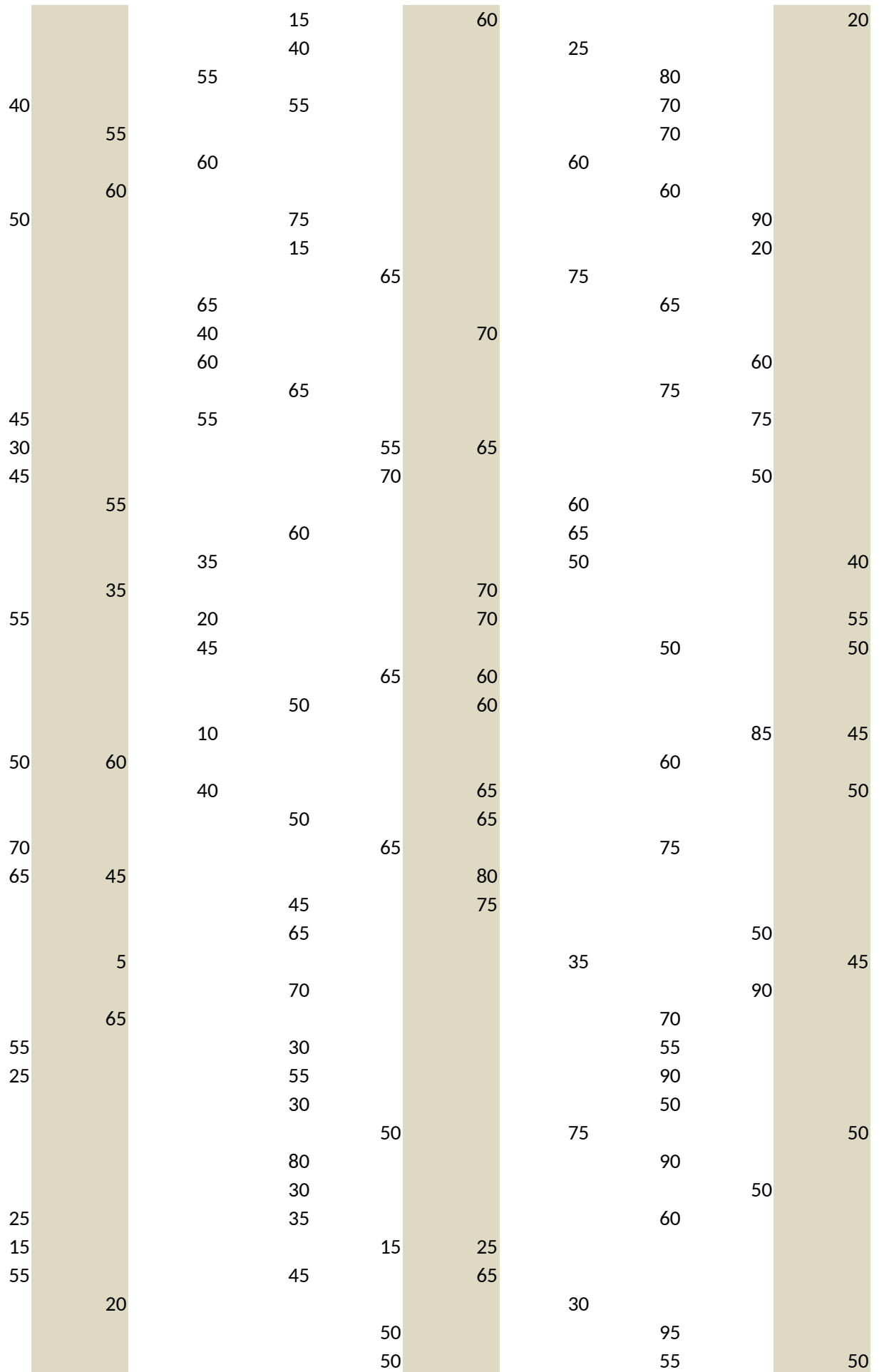


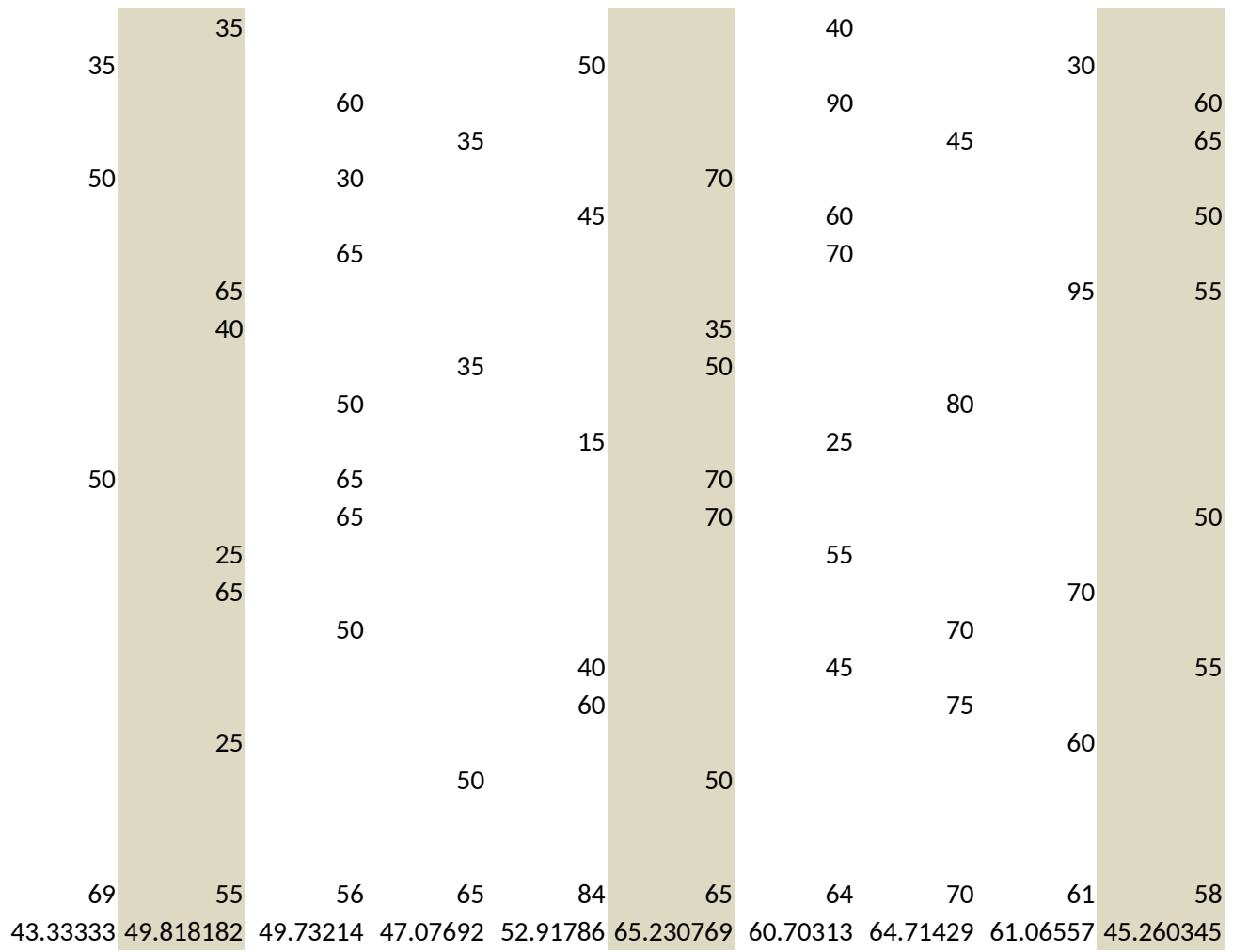
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						70			
					60	75			
				30					60
				45			50		
55				80		60			
90					80		80		60
					50	60			
55	60					70			
		60				55			
					45				65
		60					65		
		55							60
			60			75			
					50	70			
30	25						80		60
		45						70	
35			70			65			
	45						60		
	60		35					90	
		40					80		
					60			80	
45	55				55		60	55	
	60		30					70	70
65		55					75		70
60		65					70		65
			60				60		
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			35				70		
					75				50
	50							55	50
	50								
35					30	60			
		80				55			
					35		45		
		35						95	
			35			45			35
		40					20		
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60					70	80			
		50				60			35
30				30		85			
					75	60			
	50							80	



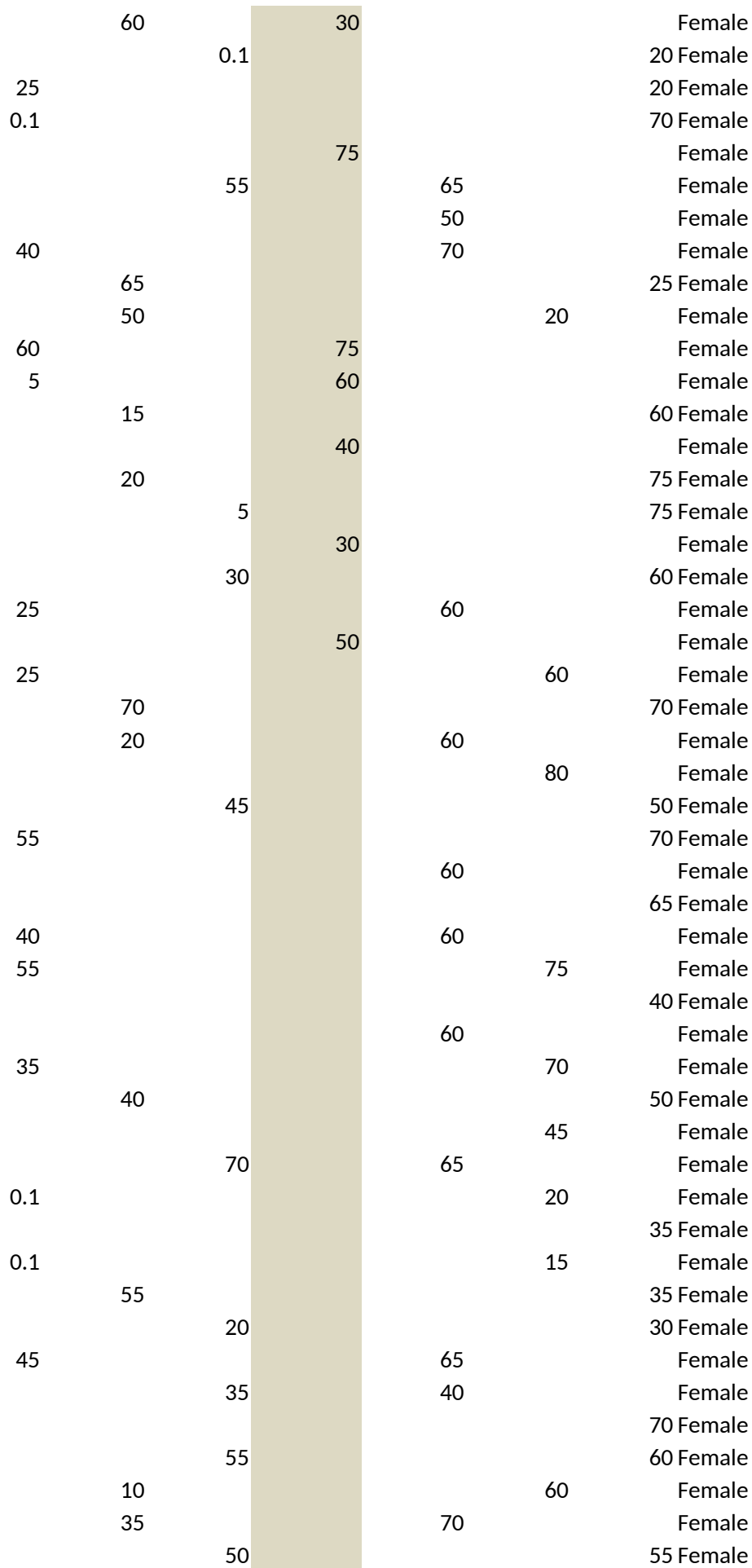




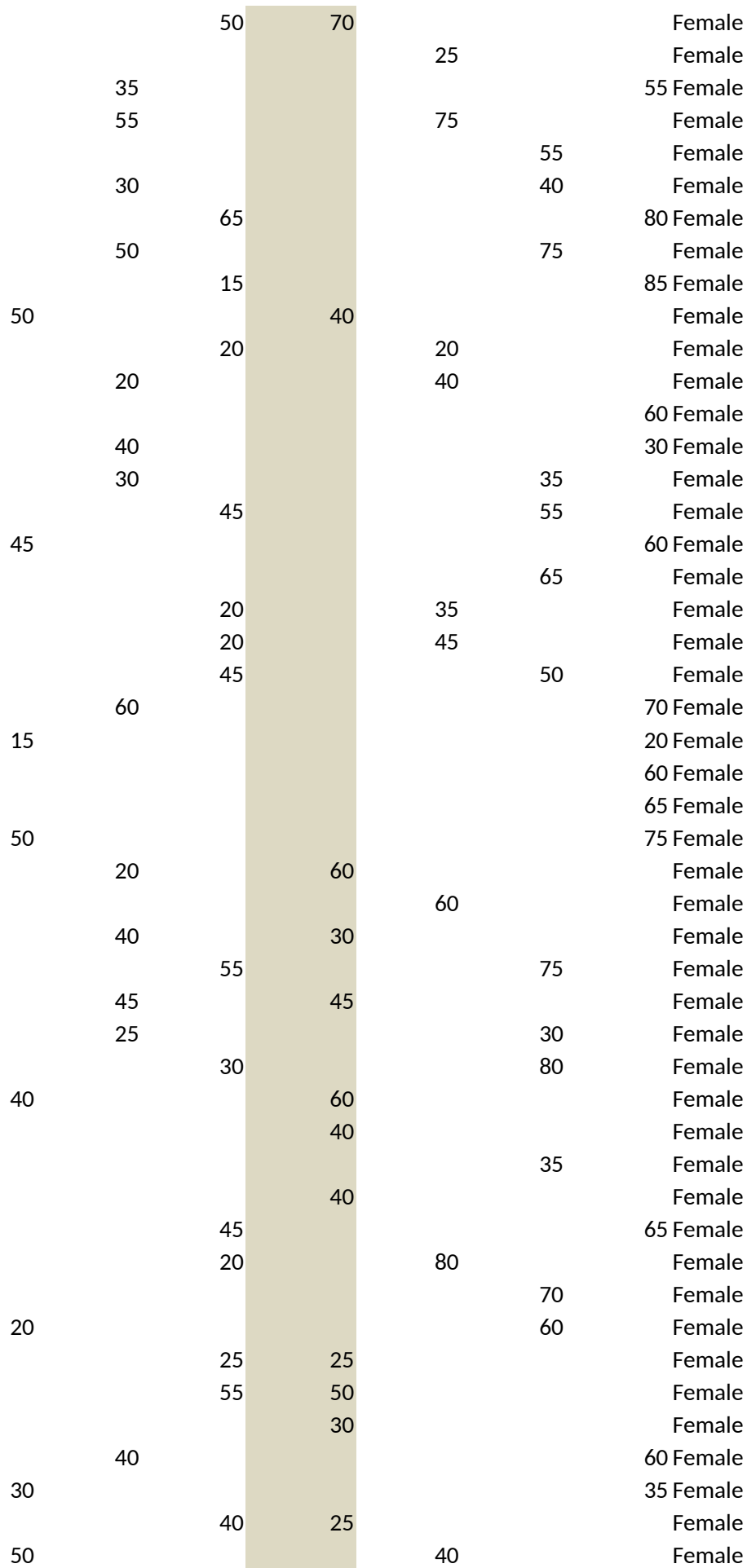




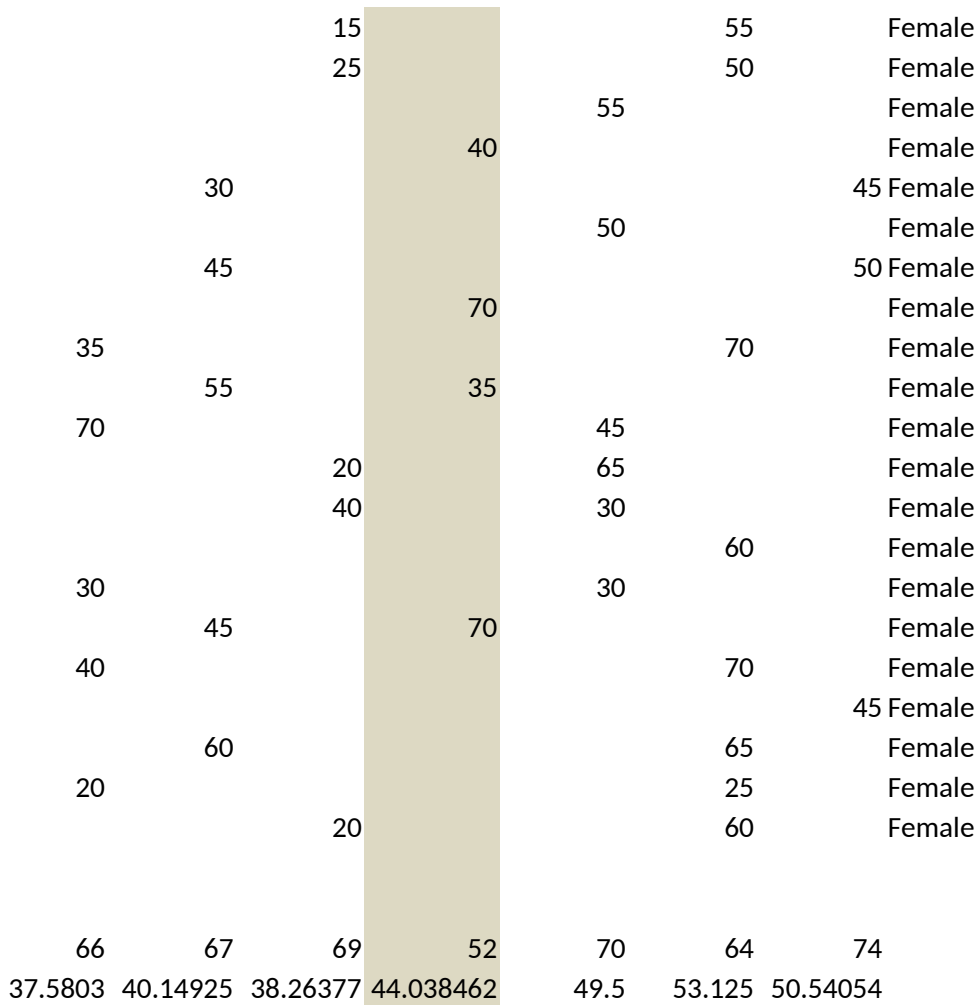
8b	8c	8d	9a	9b	9c	9d	Sex
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			60			45	Female
			45				50 Female
	45				10		Female
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		45			55		Female
					80		Female
	35				40		Female
			65	55			Female
			35	55			Female
			45		60		Female
			45			40	Female
	40				30		Female
		20			60		Female
		65				40	Female
				50			Female
	60					80	Female
	30						45 Female
		25				45	Female
	55						30 Female
	20						65 Female
		50		40			Female
		55				55	Female
		20					55 Female
		45		25			Female
		40		30			Female
			45			60	Female
							65 Female
		65			65		Female
							80 Female
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	65					25	Female



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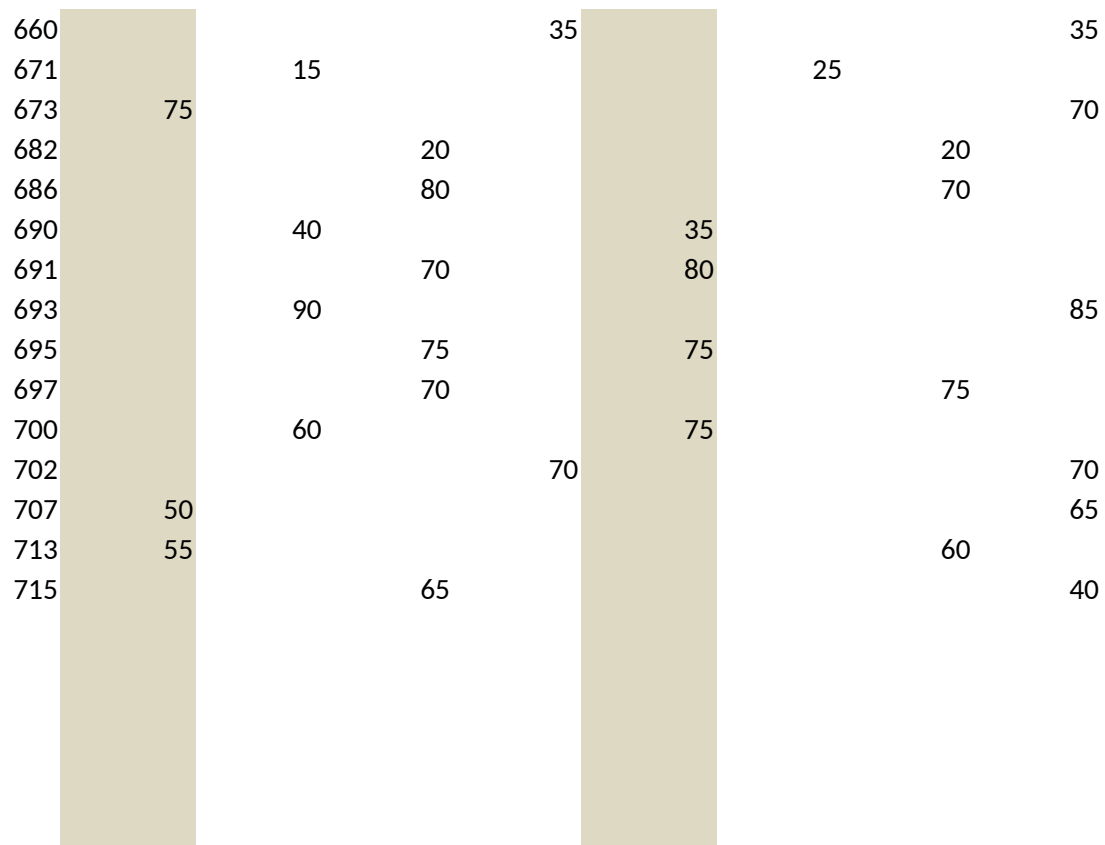
Male Alone
Male w other
SD Alone
SD w other

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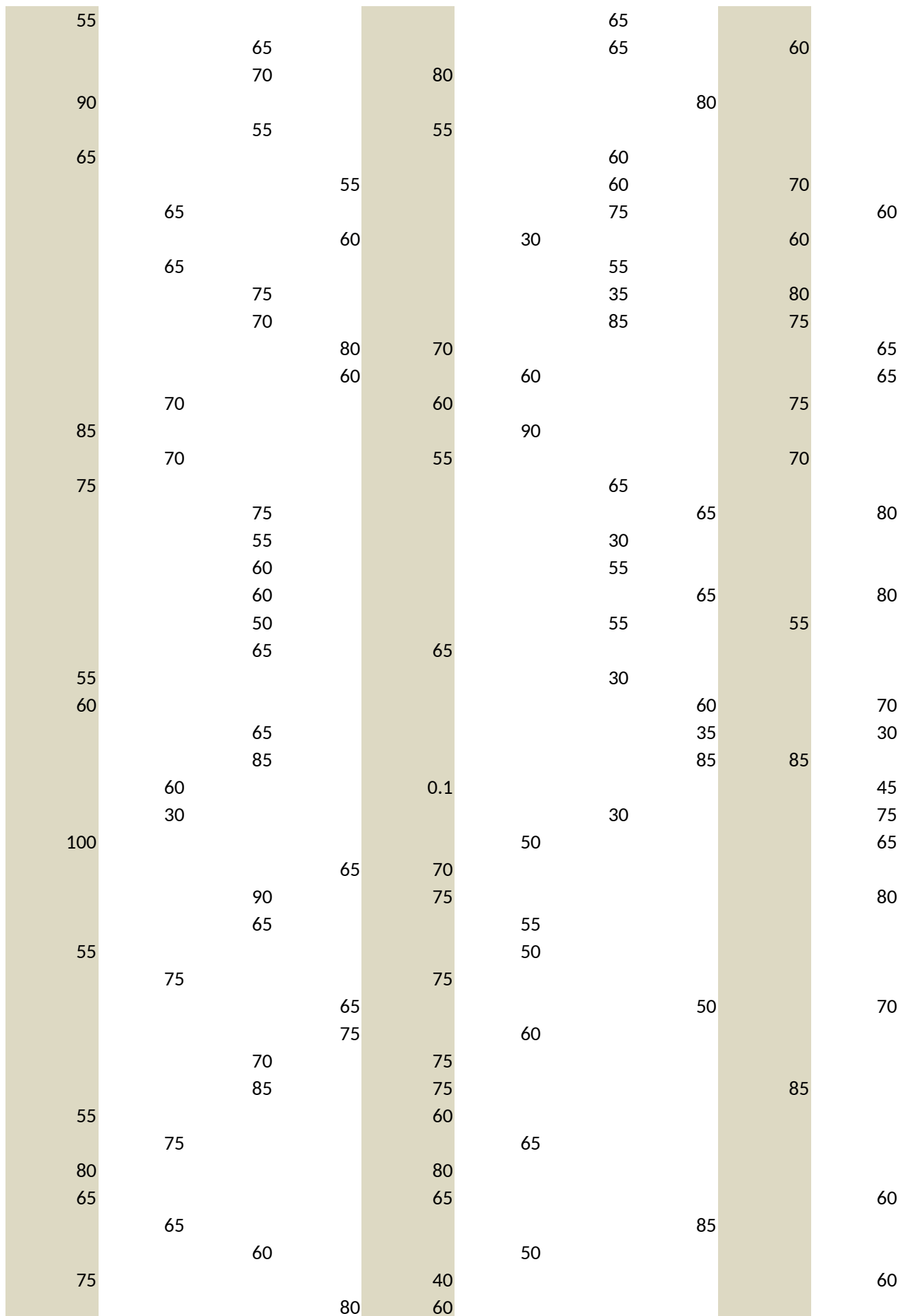
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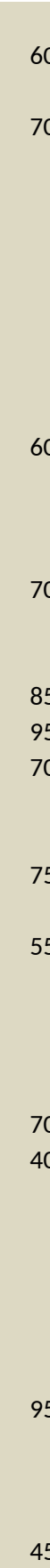
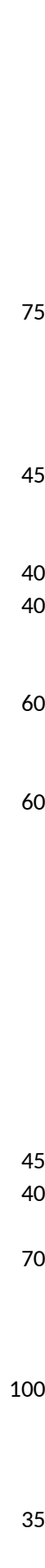
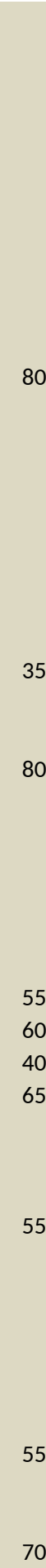
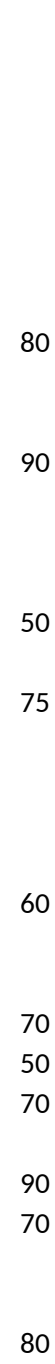
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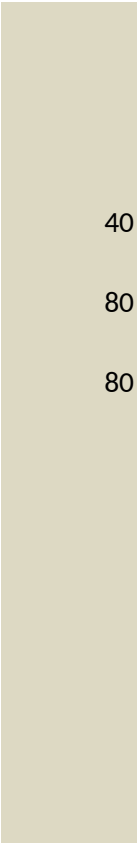
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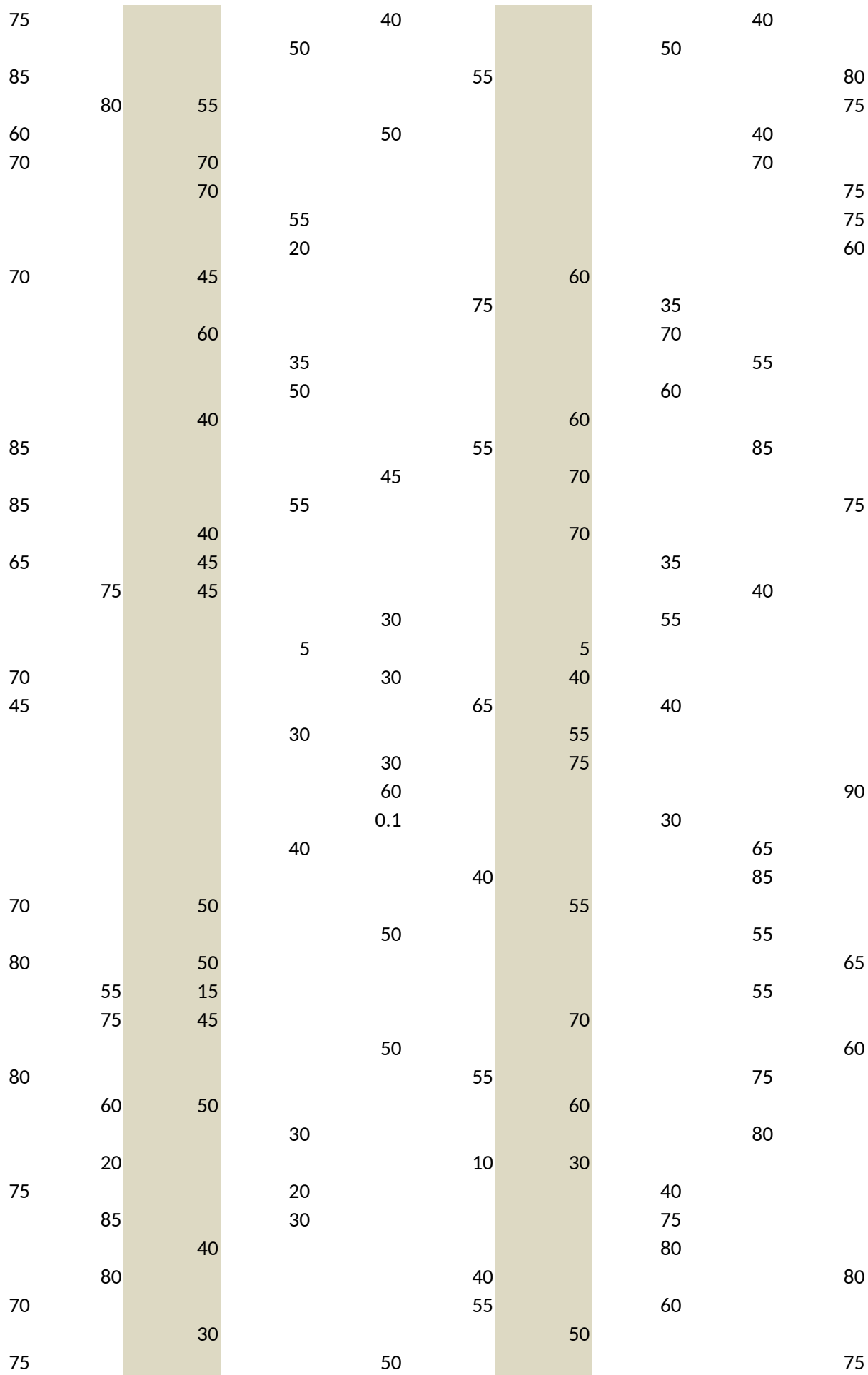
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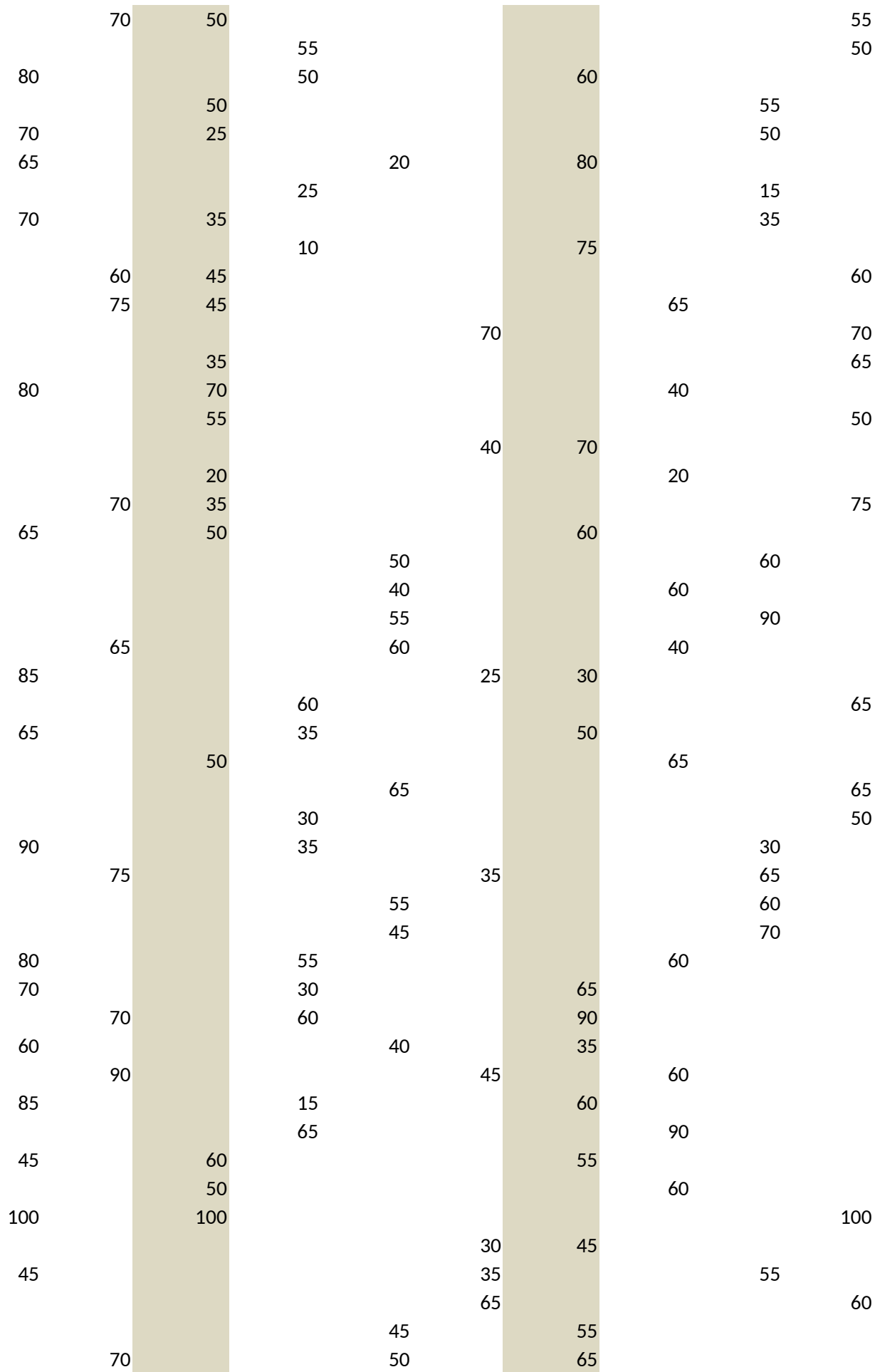
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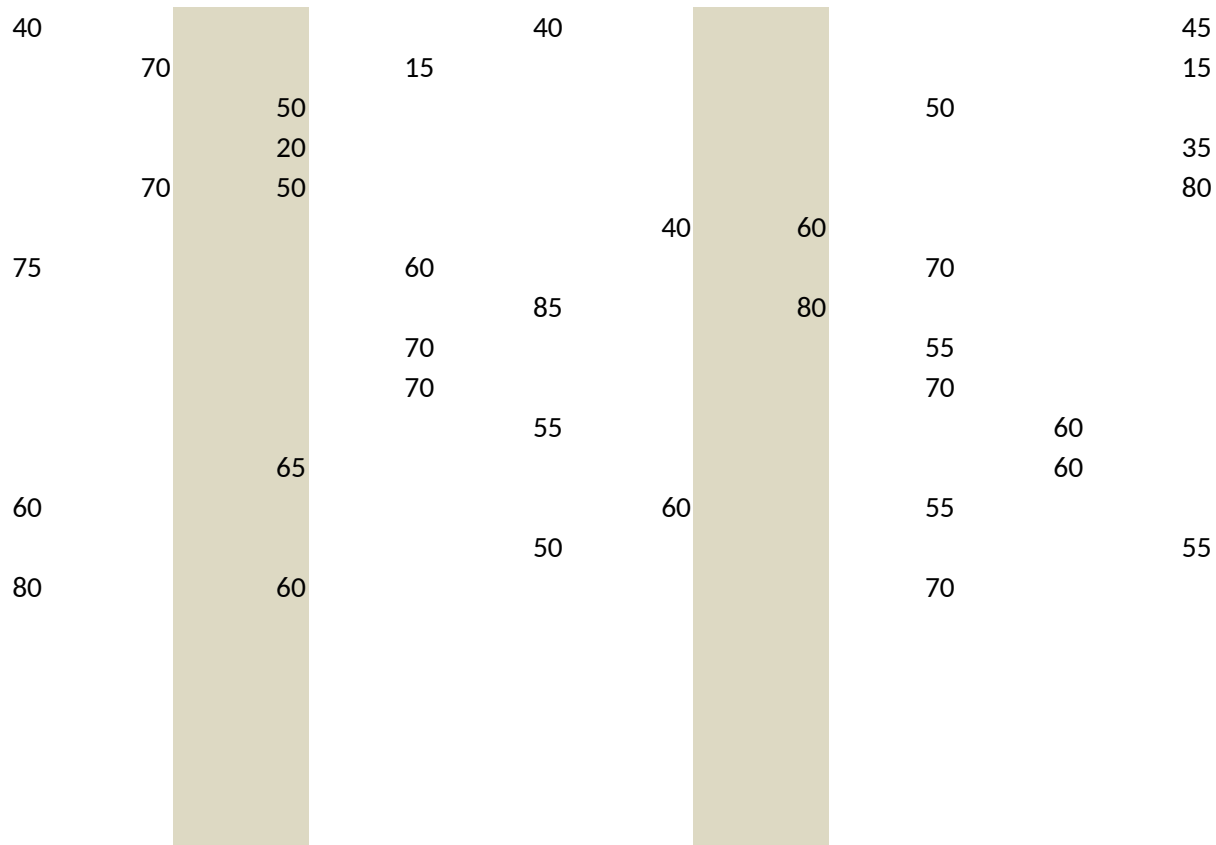
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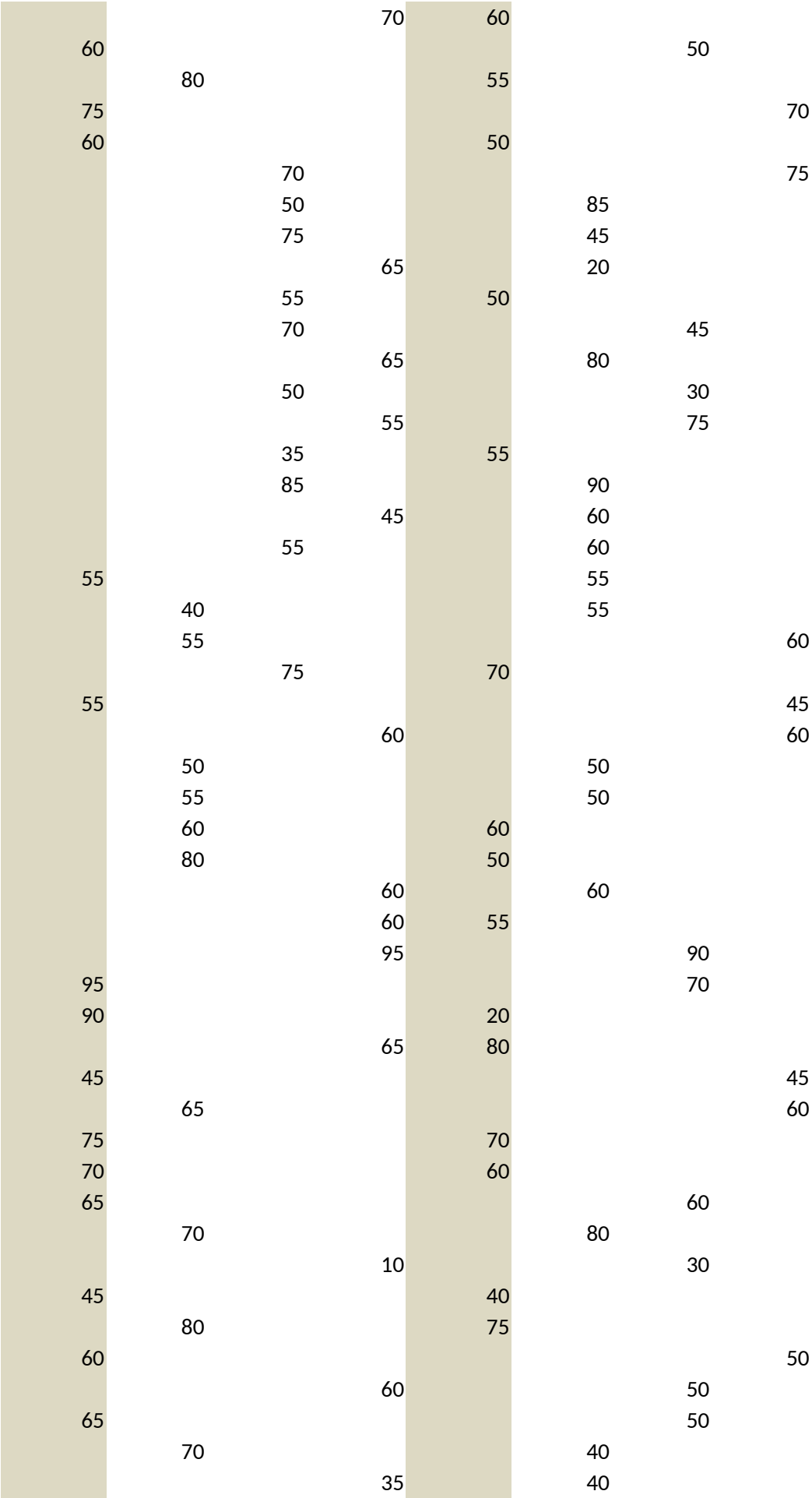
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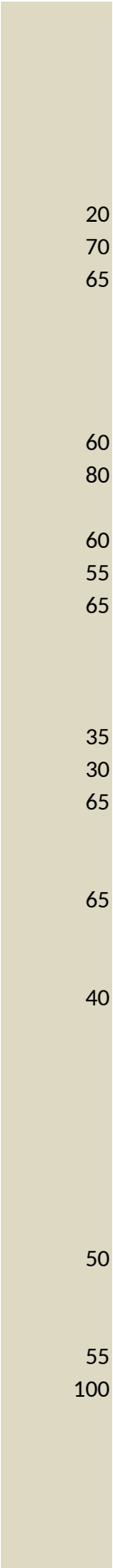




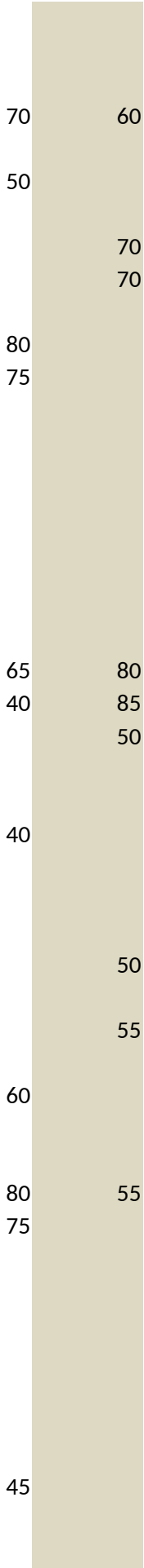


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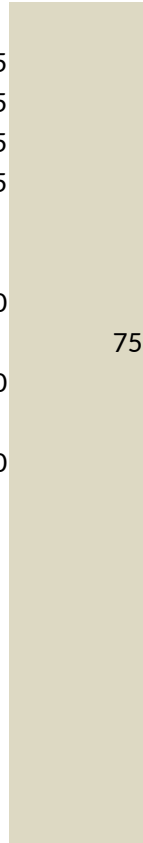
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Sex

[illegible]

[illegible]

[illegible]

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Male

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Female w other	58.43974
SD Alone	18.15871
SD w other	18.34012

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6	676942	n/a	n/a	n/a	n/a	n/a	
7	676945	n/a	n/a	n/a	n/a	n/a	
8	676946	n/a	n/a	n/a	n/a	n/a	
10	676948		60	75 n/a		20 n/a	
11	676952	n/a	n/a	n/a	n/a	n/a	
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37	677065		65	10 n/a	n/a	n/a	
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78	681267		65 n/a	n/a	n/a	n/a	
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86	687685		25	10 n/a		15 n/a	
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92	689457	n/a	n/a	n/a	n/a	n/a	
99	689658	n/a	n/a	n/a	n/a	n/a	
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114	690012	n/a	n/a	n/a	n/a	n/a	
128	690173	n/a		35 n/a		40 n/a	
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133	690197		55 n/a	n/a		55	55
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387	719414		40	70 n/a		60 n/a	
391	719418	n/a	n/a	n/a	n/a	n/a	
395	719422	n/a	n/a	n/a	n/a	n/a	
396	719423	n/a	n/a	n/a	n/a	n/a	
403	719430		75 n/a		75 n/a	n/a	
411	719438	n/a		65 n/a		45 n/a	
414	719442	n/a	n/a	n/a		50	55
416	719445	n/a	n/a	n/a	n/a	n/a	
417	719446	n/a	n/a	n/a	n/a	n/a	
424	719453	n/a	n/a	n/a	n/a	n/a	
425	719454	n/a	n/a	n/a	n/a	n/a	
427	719456		65 n/a	n/a		65 n/a	
432	719461		90 n/a	n/a	n/a		85
440	719471	n/a	n/a	n/a	n/a	n/a	
443	719474	n/a	n/a		10	45 n/a	
447	719479	n/a	n/a	n/a	n/a	n/a	
453	719485		75	80 n/a		75	80
455	719487	n/a	n/a	n/a	n/a	n/a	
458	719490	n/a	n/a	n/a	n/a	n/a	
466	719499	n/a	n/a	n/a	n/a	n/a	
468	719501	n/a	n/a	n/a	n/a	n/a	
469	719502	n/a		25	30 n/a	n/a	
476	719509	n/a	n/a	n/a	n/a	n/a	
477	719510	n/a	n/a	n/a	n/a	n/a	
480	719513	n/a	n/a	n/a	n/a	n/a	
485	719519		45 n/a		45	35 n/a	
514	719552	n/a	n/a	n/a	n/a	n/a	
519	719558	n/a	n/a	n/a	n/a	n/a	
522	719561		55	50 n/a	n/a	n/a	

523	719562	n/a	n/a		50	55	65
524	719563	n/a	n/a	n/a	n/a	n/a	
526	719565		70	50	45 n/a		65
528	719567		60	60	55 n/a		90
529	719568	n/a	n/a	n/a	n/a	n/a	
531	719571		80 n/a	n/a		75 n/a	
535	719578	n/a	n/a	n/a	n/a	n/a	
537	719580	n/a	n/a	n/a	n/a	n/a	
542	719586	n/a	n/a	n/a	n/a	n/a	
552	719596		50	75 n/a		50 n/a	
553	719597	n/a		35	30	25 n/a	
556	719601	n/a	n/a	n/a	n/a	n/a	
561	719606	n/a	n/a	n/a	n/a	n/a	
563	719609	n/a		20	45	30 n/a	
566	719613		75 n/a		60	60 n/a	
567	719614	n/a	n/a	n/a		50	45
576	719624	n/a		50 n/a		50	60
578	719626	n/a		70 n/a	n/a	n/a	
586	719635	n/a	n/a	n/a	n/a	n/a	
593	719642		75 n/a	n/a	n/a		70
599	719649	n/a	n/a	n/a	n/a	n/a	
600	719650	n/a		0 n/a		55	65
601	719651	n/a	n/a	n/a	n/a	n/a	
608	719658	n/a	n/a	n/a	n/a	n/a	
615	719665	n/a	n/a		65	40	30
623	719674	n/a		75	65 n/a		75
646	719700	n/a	n/a	n/a	n/a	n/a	
648	719702		70	85 n/a	n/a	n/a	
650	719704	n/a	n/a	n/a	n/a	n/a	
660	719716		65	65	50 n/a	n/a	
676	719735	n/a	n/a	n/a	n/a	n/a	
677	719736	n/a	n/a	n/a	n/a	n/a	
681	719741	n/a	n/a	n/a	n/a	n/a	
682	719742	n/a	n/a	n/a	n/a	n/a	
695	719755	n/a	n/a	n/a	n/a	n/a	
697	719758	n/a	n/a	n/a	n/a	n/a	
700	719761		75 n/a	n/a		65 n/a	
702	719764		65	70 n/a	n/a	n/a	
705	719767	n/a	n/a	n/a	n/a	n/a	
706	719769	n/a	n/a	n/a	n/a	n/a	
717	719782	n/a		40	60	30 n/a	
718	719783	n/a	n/a	n/a	n/a	n/a	
719	719784	n/a	n/a	n/a	n/a	n/a	
734	719799	n/a	n/a	n/a	n/a	n/a	
737	719802	n/a		60 n/a		40	50
752	719818		80	65	70	80	80

756	719823	n/a	n/a	n/a	n/a	n/a	
758	719826	n/a	n/a	n/a	n/a	n/a	
762	719831	n/a	n/a	n/a	n/a	n/a	
763	719835	n/a	n/a	n/a	n/a	n/a	
765	719837	n/a		90 n/a	n/a		80
768	719841	n/a	n/a	n/a	n/a	n/a	
772	719847	n/a	n/a		20 n/a		80
773	719849		75	80	50	85	85
784	719871		80	50 n/a		70	80
789	719877		65 n/a		45 n/a	n/a	
790	719878		35 n/a	n/a		80	45
796	719884	n/a	n/a	n/a	n/a	n/a	
812	719901		60 n/a		80 n/a		55
815	719904	n/a	n/a	n/a	n/a	n/a	
826	719916	n/a	n/a	n/a	n/a	n/a	
829	719919	n/a	n/a	n/a	n/a	n/a	
842	719933	n/a		45 n/a		50	45
848	719939	n/a	n/a	n/a	n/a	n/a	
864	719956	n/a	n/a	n/a	n/a	n/a	
866	719958	n/a	n/a	n/a	n/a	n/a	
870	719966	n/a		75 n/a	n/a	n/a	
872	719968	n/a		40	70	65 n/a	
881	719977	n/a	n/a	n/a	n/a	n/a	
893	719990	n/a		60	60	55 n/a	
899	719998	n/a	n/a	n/a	n/a	n/a	
905	720004	n/a	n/a	n/a	n/a	n/a	
908	720007	n/a	n/a	n/a	n/a	n/a	
912	720012	n/a	n/a	n/a	n/a	n/a	
918	720023	n/a	n/a	n/a	n/a	n/a	
919	720025	n/a	n/a	n/a	n/a	n/a	
920	720027	n/a	n/a	n/a	n/a	n/a	
924	720036		85	50	95	50	50
931	720047	n/a	n/a	n/a	n/a	n/a	
935	720051	n/a	n/a	n/a	n/a	n/a	
936	720052	n/a	n/a	n/a	n/a	n/a	
943	720063		0 n/a		0 n/a		5
948	720070		55 n/a		60 n/a	n/a	
950	720072	n/a	n/a	n/a	n/a	n/a	
959	720082	n/a	n/a		85 n/a	n/a	
961	720085	n/a	n/a	n/a	n/a	n/a	
966	720094	n/a	n/a	n/a	n/a	n/a	
973	720102	n/a		75	95 n/a	n/a	
974	720104	n/a	n/a	n/a	n/a	n/a	
982	720120	n/a	n/a	n/a	n/a	n/a	
985	720127		45	70 n/a		45 n/a	
995	720146		80	90	75 n/a	n/a	

996	720147	n/a	n/a	n/a	n/a	n/a	
998	720151	n/a	n/a	n/a	n/a	n/a	
1001	720155		80	70	n/a		70 n/a
1004	720158		85	n/a		85	95 n/a
1008	720167	n/a	n/a			55 n/a	60
1014	720174		40	75	25	n/a	80
1022	720189	n/a		95	n/a	n/a	
1024	720193	n/a	n/a	n/a	n/a	n/a	
1026	720195	n/a	n/a	n/a	n/a	n/a	
1034	720214		55	n/a		60	55 n/a
1036	720219	n/a		60	n/a		50 65
1037	720222	n/a	n/a	n/a	n/a	n/a	

Means 63.090909 56.885246 54.017857 54.310345 60.408163

**Overall Means
SDs**

	30	20 n/a	n/a		50 n/a		60	85	95
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	40	85 n/a		75 n/a		35 n/a		40 n/a	
	20	55 n/a	n/a		55 n/a		25	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a		35 n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a		80 n/a	n/a	n/a		65	n/a	80
	45 n/a	n/a	n/a		30	20 n/a		45	60
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	50	90 n/a		70	80	70 n/a		60 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a		80	65	85	70	80	50
	65 n/a	n/a		60	55	35	50	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a		40	80	70	50 n/a	n/a		n/a	75
n/a		60 n/a		60	35	55 n/a		55 n/a	
	60	50	75 n/a		75 n/a		45	80	70
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a		75 n/a	n/a		80 n/a	n/a		n/a	70
n/a	n/a		85	80	75 n/a	n/a		n/a	90
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a		20	5	25	10	10	40
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	55 n/a	n/a		65 n/a	n/a		65	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a		30 n/a	n/a	n/a	n/a		35 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a		20 n/a		35	35	n/a	25
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	40	30 n/a	n/a	n/a	n/a	n/a		n/a	n/a

n/a	n/a		60	n/a	45	55	10	60	35
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	55	50	n/a		50	60	45	50	n/a
n/a	n/a	n/a		80	n/a		65	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	75	80	n/a	n/a	n/a		75	75	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a		65	60	n/a	n/a	n/a		55	n/a
n/a	n/a	n/a	n/a		45	n/a		35	55
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a		45	n/a	n/a		80
	40	n/a		45	80	55	50	65	n/a
	85	n/a		75	n/a	n/a	40	40	70
	50	n/a	n/a	n/a	n/a		60	n/a	60
n/a		85	85	n/a		90	n/a	n/a	55
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	80	n/a		80	90	n/a		80	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	45	n/a	n/a	n/a	n/a	n/a	n/a		35
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a		40	n/a	n/a		55	n/a	30	55
n/a	n/a		75	n/a		80	n/a	70	70
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a		70	n/a	80	n/a	n/a		n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a		70	85	60	n/a		60	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a		85	85	n/a		70	75	70	n/a
n/a		55	n/a	n/a	n/a	n/a		50	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
	40	40	n/a		60	45	30	30	50
	55	n/a		55	65	35	35	n/a	40
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a
n/a	n/a	n/a		55	50	45	45		55
	85	n/a	n/a	n/a		75	n/a	n/a	n/a

n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a		65	75	40	n/a	25 70
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	70	90	n/a	n/a	55	n/a	80	95 n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	20	95	n/a	85	n/a	n/a	55	85 85
n/a		70	70	n/a	80	80	70	n/a n/a
	40	n/a	n/a	n/a	50	n/a	n/a	n/a n/a
	55	65	n/a	70	60	n/a	n/a	n/a 60
n/a	n/a	n/a	n/a	n/a	n/a		35	n/a 80
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	65	n/a	n/a	55	75	45	n/a	n/a 75
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a		70	n/a	n/a	n/a	55	n/a	60 n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	50	n/a	65	90	45	45	50	30 n/a
	30	75	n/a	n/a	n/a		25	50 n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	45	60	65	75	65	n/a	n/a	70 n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a		65	55	n/a	35	40	35 45
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	50	75	n/a	n/a	5	n/a	75	n/a n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	0	n/a	15	0	0	n/a	0	n/a 0
	70	n/a	n/a	n/a	50	n/a	75	n/a 90
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a		90	70	75	60	60 80
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	25	55	50	n/a	n/a	20	n/a	35 n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	65	45	n/a	n/a		45	n/a	n/a
	60	70	n/a	n/a	60	n/a	70	n/a n/a

n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	35	60	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a		90	90	n/a	n/a	n/a	75
	50	75	55	60	60	n/a	55	70
	45	n/a		95	n/a	n/a	50	n/a
	30	75	n/a		60	n/a	60	65
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a		65	80	75	n/a	n/a	90
	50	15	n/a	n/a	n/a	n/a	n/a	55
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

50.234375 62.115385 66.836735 60.8 55.701754 45.283019 47.982456 51.37931 65.673077



[illegible]

n/a	n/a		95	n/a	n/a	75	95	n/a	80
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n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a		90	n/a	n/a	60	n/a	55	n/a
	55	n/a	n/a	n/a	n/a	35	75	n/a	40
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	70	60	n/a		25	55	75	n/a	35
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a		65	85	n/a	75	80	85
n/a		65	75	n/a	50	20	90	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
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	45	n/a		65	n/a	45	55	n/a	n/a
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n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
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									75
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	45	60	50	n/a	n/a	30	45	40	50

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n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	60 n/a	n/a		45	45	55 n/a	n/a	n/a	
n/a	n/a	n/a	n/a		75	70	70	85 n/a	

n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	25	55	60	40	35	50	n/a	n/a	
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n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
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n/a		85	n/a	n/a	n/a	45	n/a	40	50
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n/a		65	75	n/a	n/a		40	55	n/a
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[illegible]

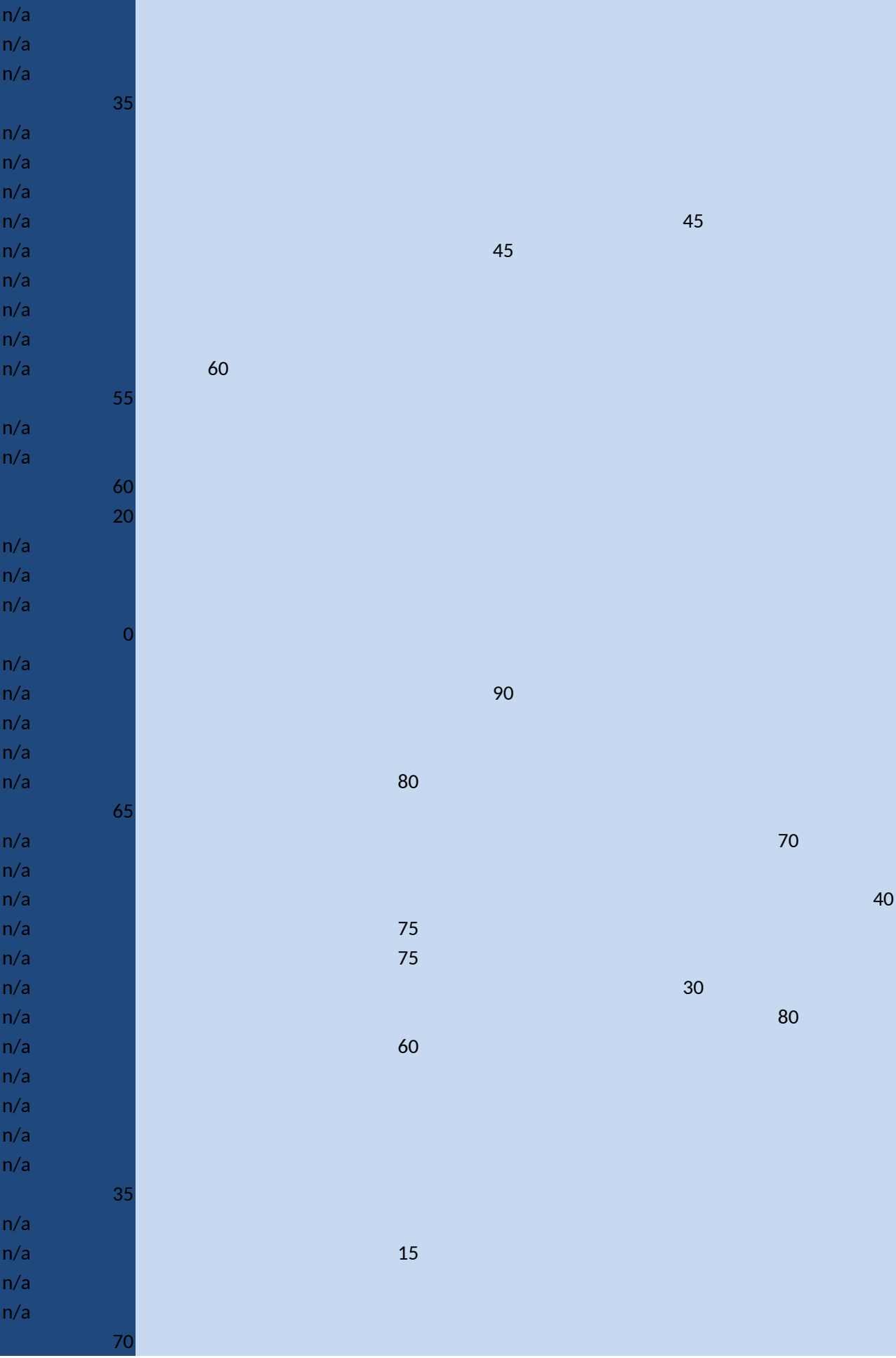
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	Average	SD
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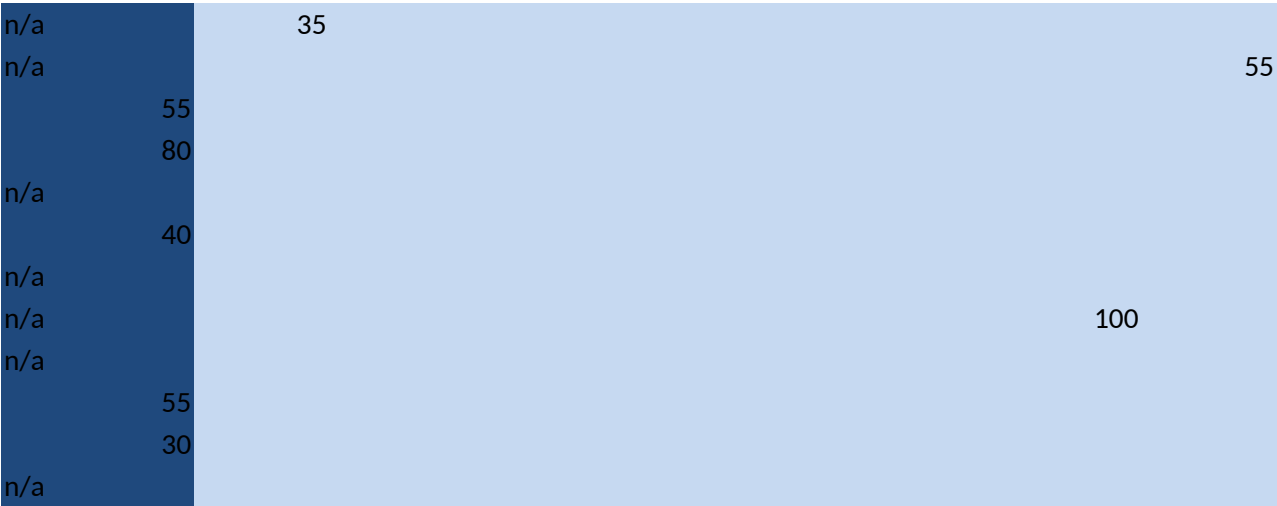
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n/a								
n/a								
n/a								
30								
n/a								
n/a								
80								
35								
n/a								
n/a			65					
n/a								
n/a							50	
n/a				70				
60								
70								
n/a								50
n/a						65		
n/a								
n/a		60						
n/a								
n/a								
55								
n/a								
n/a								
n/a				60				
n/a								
n/a			75					
25								
n/a					80			
n/a								
15								
n/a								
n/a								
n/a								
n/a						55		
n/a			25					
n/a							35	
25								
n/a								
n/a				50				
n/a							75	
35								
n/a		85						
n/a								

	10	
	55	
n/a		
n/a	55	
	50	
n/a		
n/a		
	55	
n/a		35
n/a	55	
n/a	65	
n/a		
n/a		
n/a		65
n/a		
	50	
n/a		90
n/a		
	60	
	55	
	90	
n/a		
	45	
n/a		
n/a		75
	85	
	40	
	45	
n/a		85
n/a		
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n/a		
n/a		15
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n/a		
n/a	35	
n/a		
	45	
	75	
n/a	65	

[illegible]



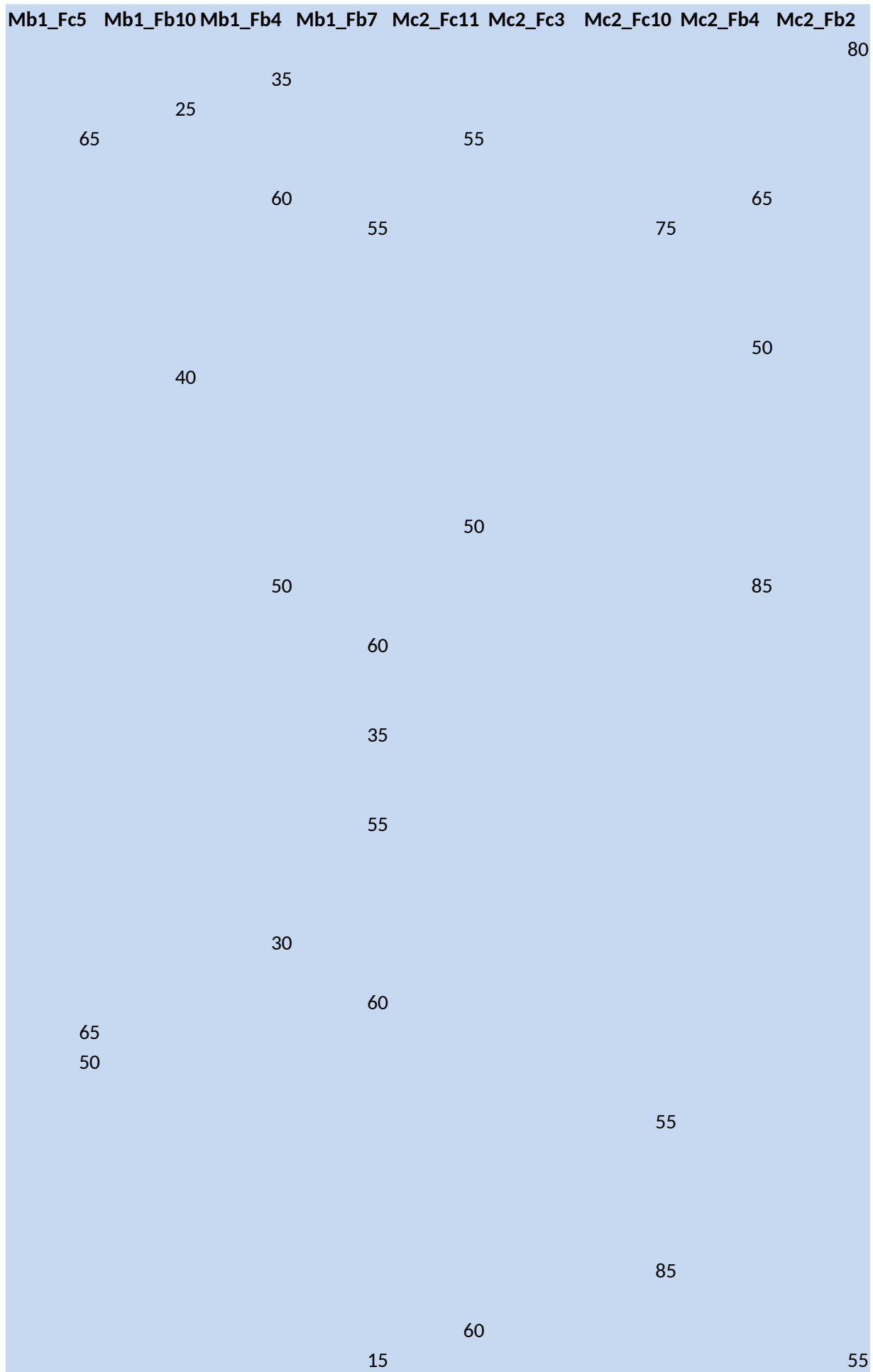
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n/a					
n/a					
70					
n/a			40		
n/a					
n/a					
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n/a				40	
n/a					
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n/a			65		
45					
n/a					
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n/a		75			
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n/a	40				
70					
n/a					
n/a					60
75					
n/a					



51.4285714286 51.428571 60.625 63.333333 61.071429 59.285714 56.666667 67.272727 49.285714

Male Alone

56.2868731563
21.3558741946



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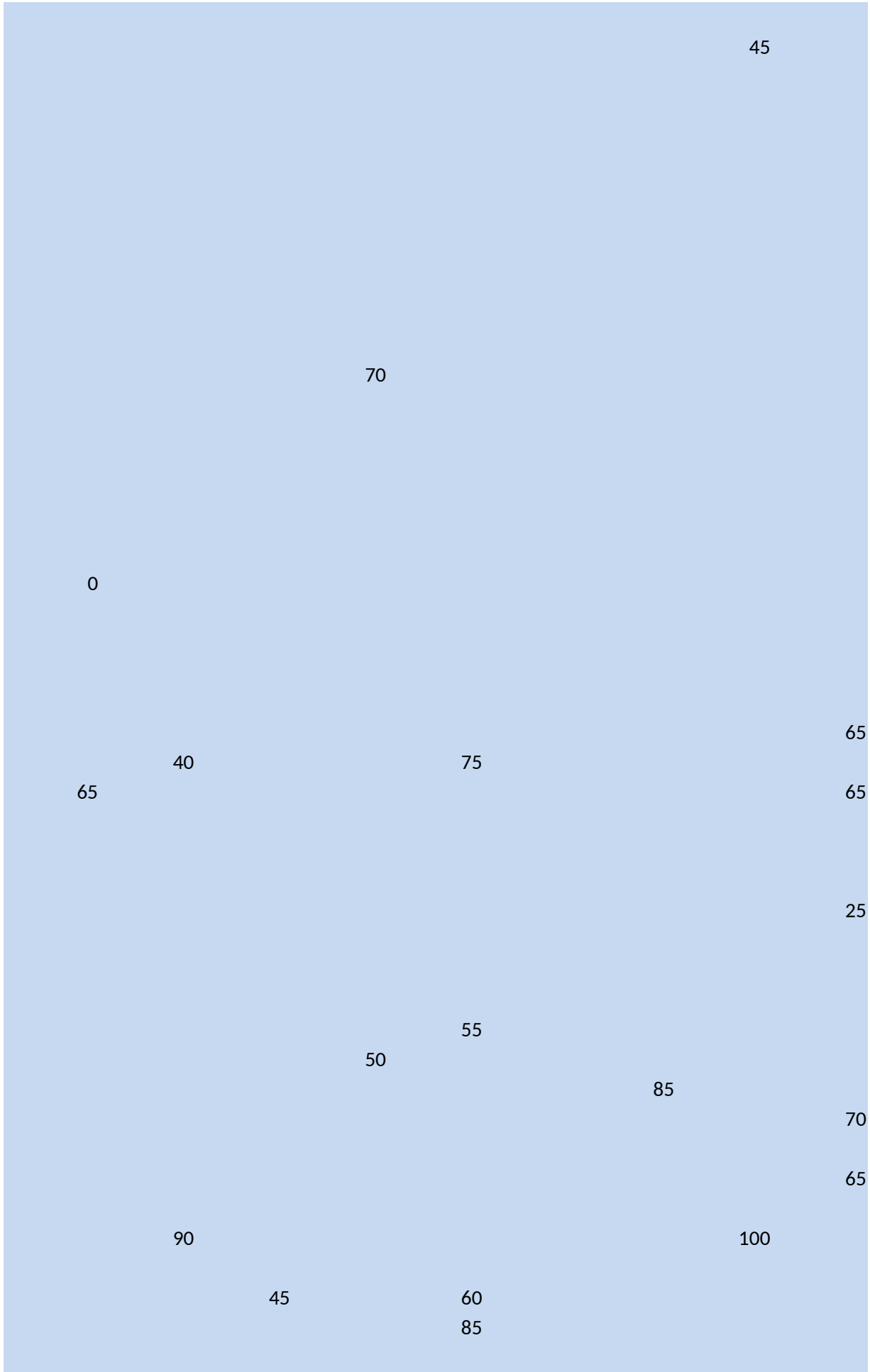
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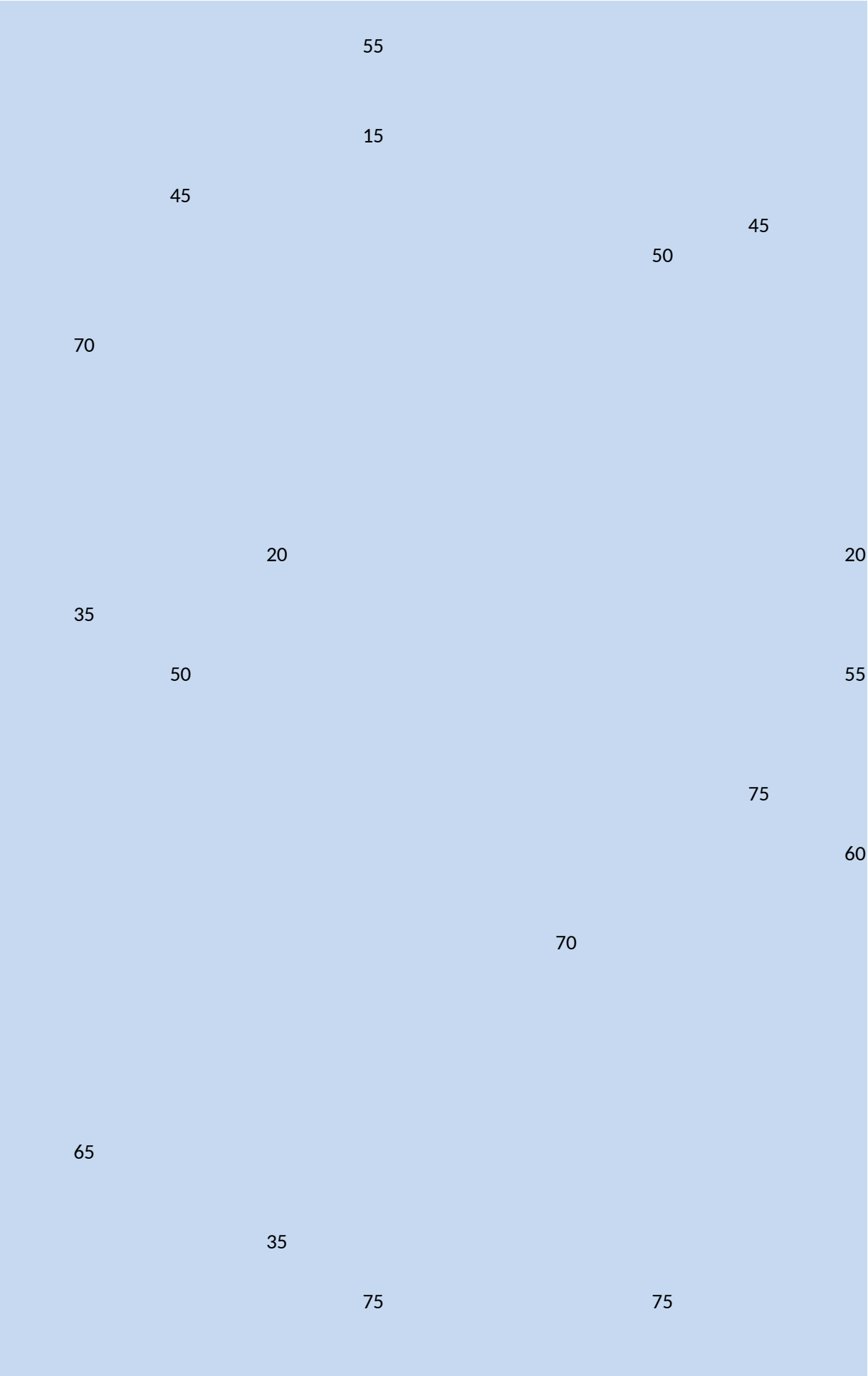
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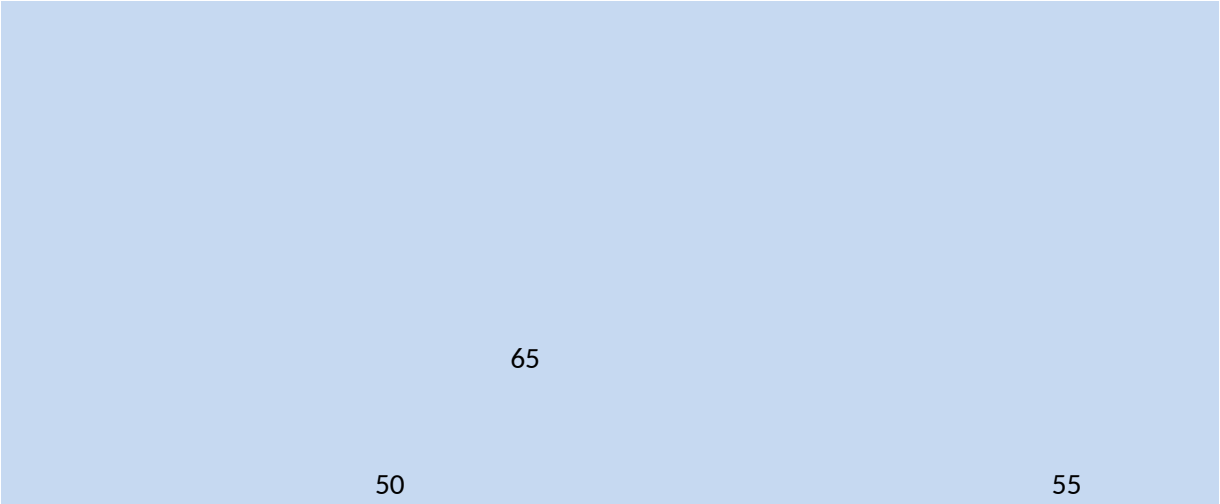
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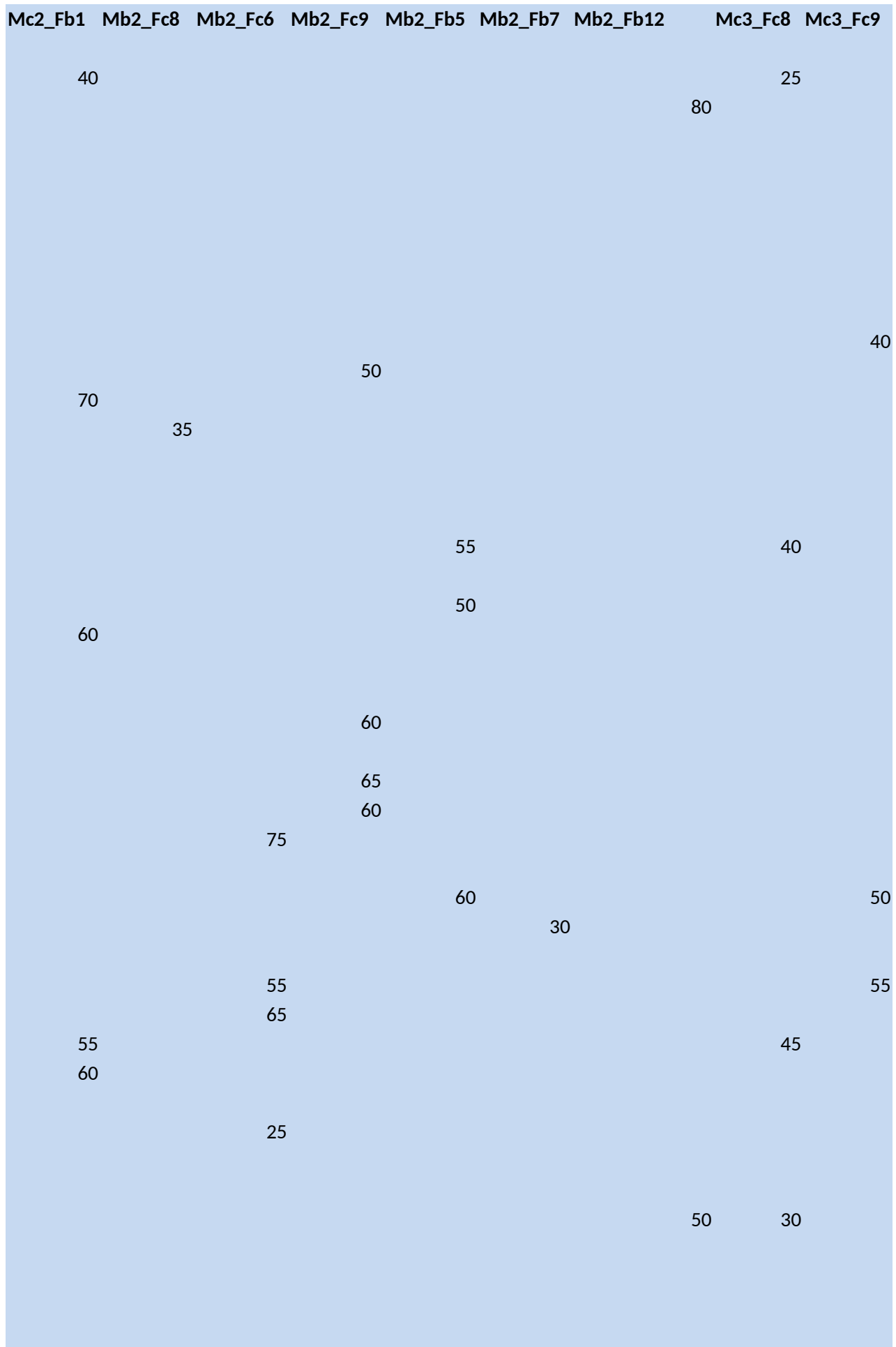
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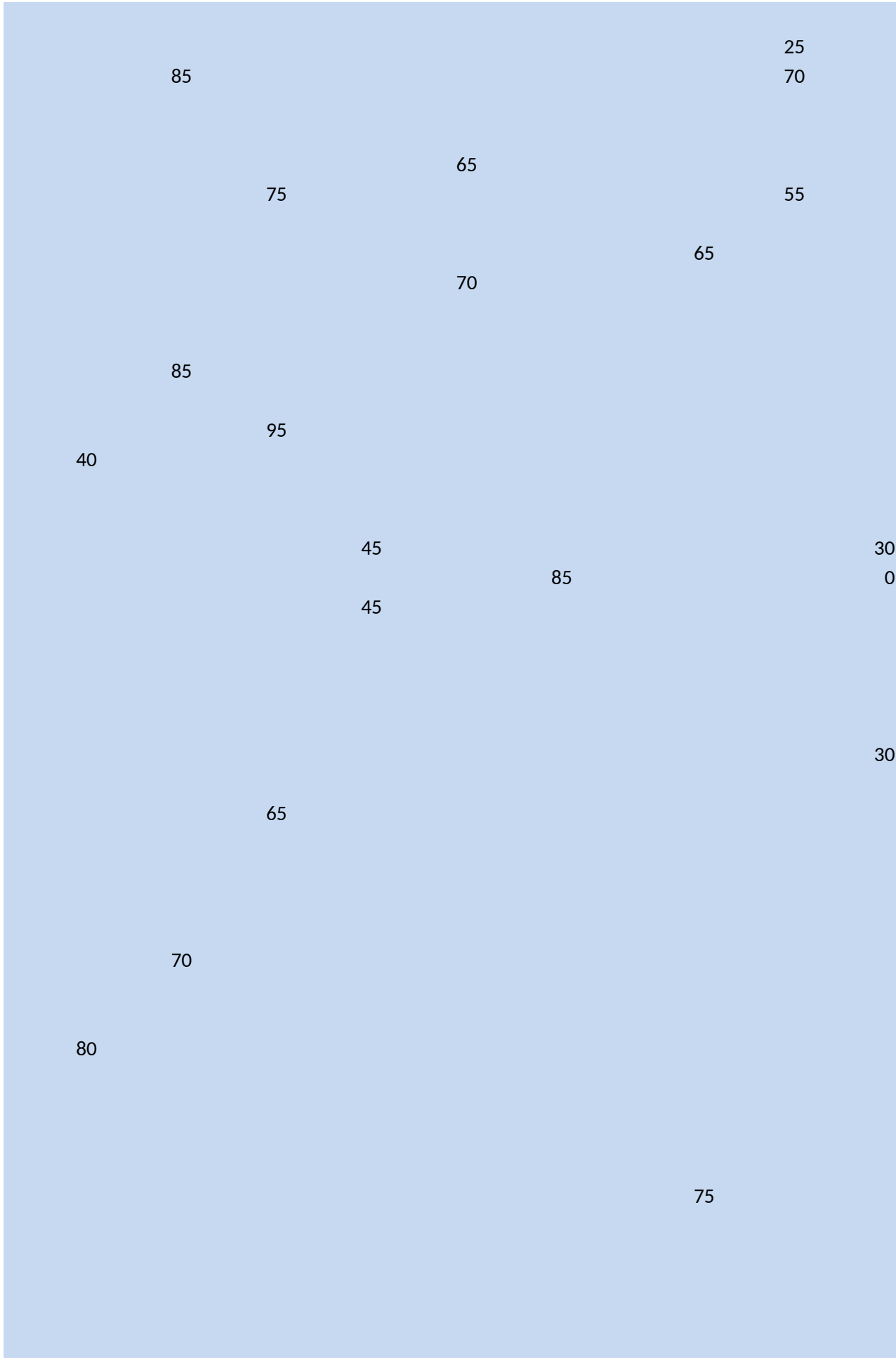
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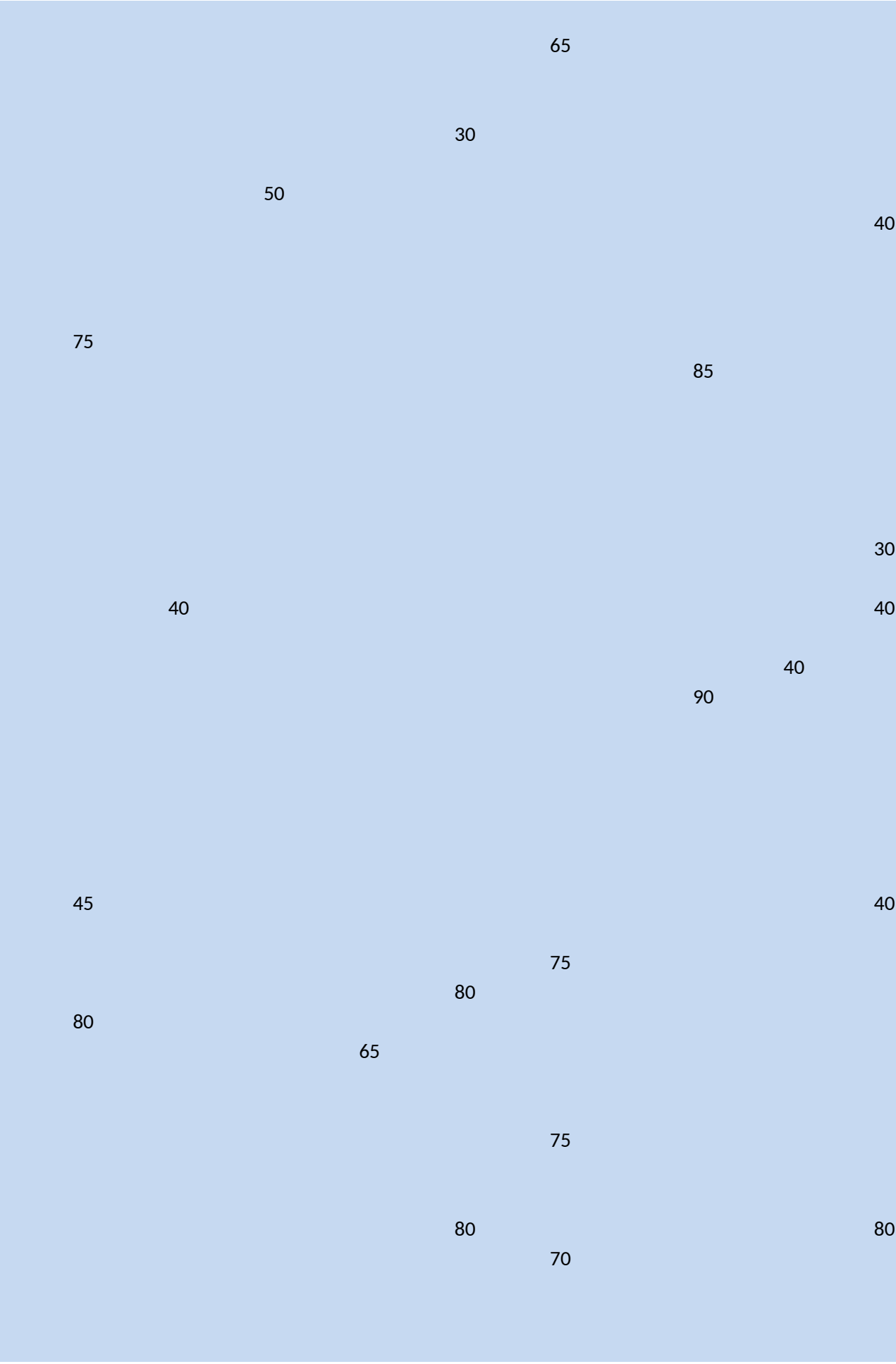
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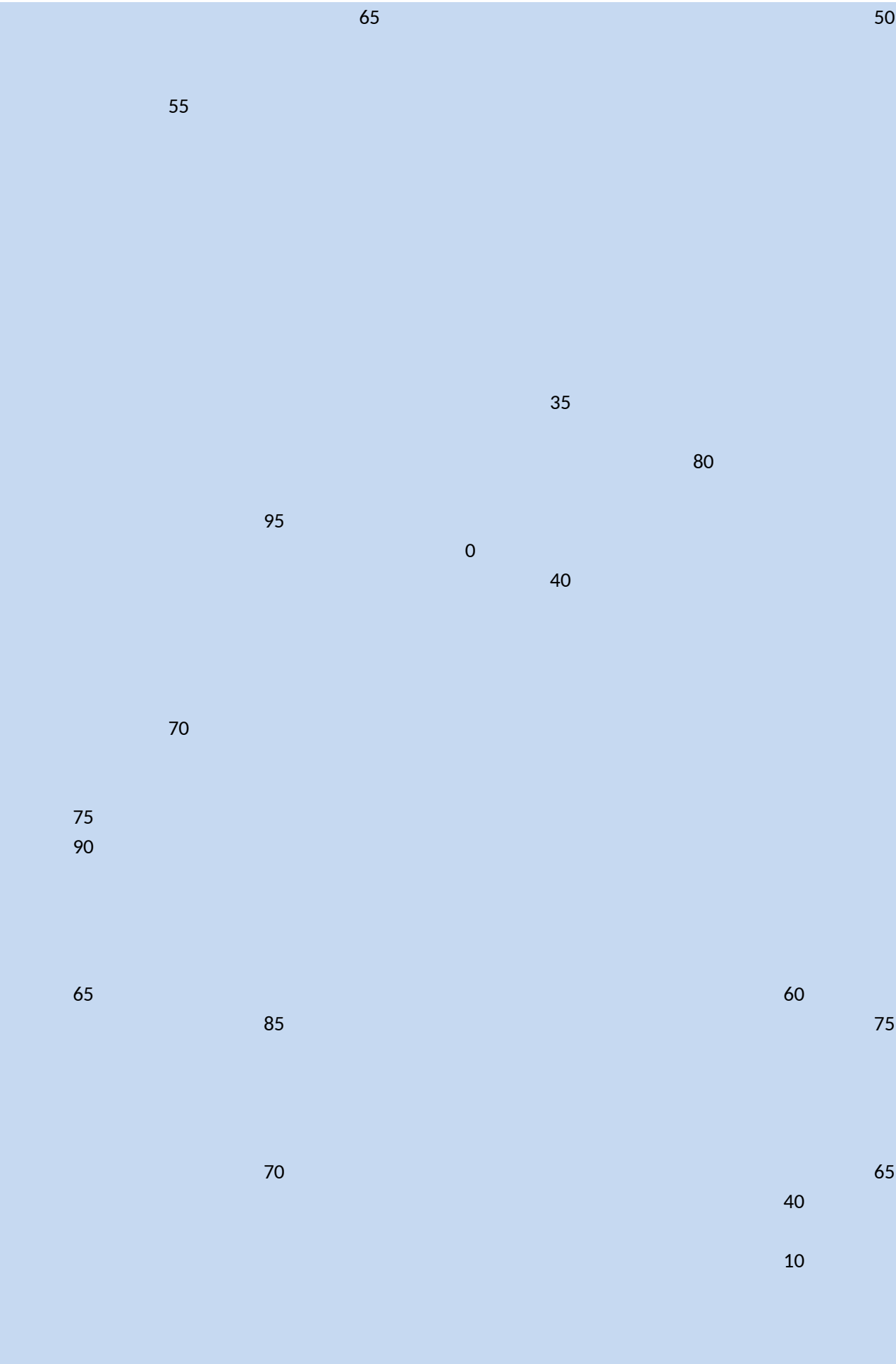
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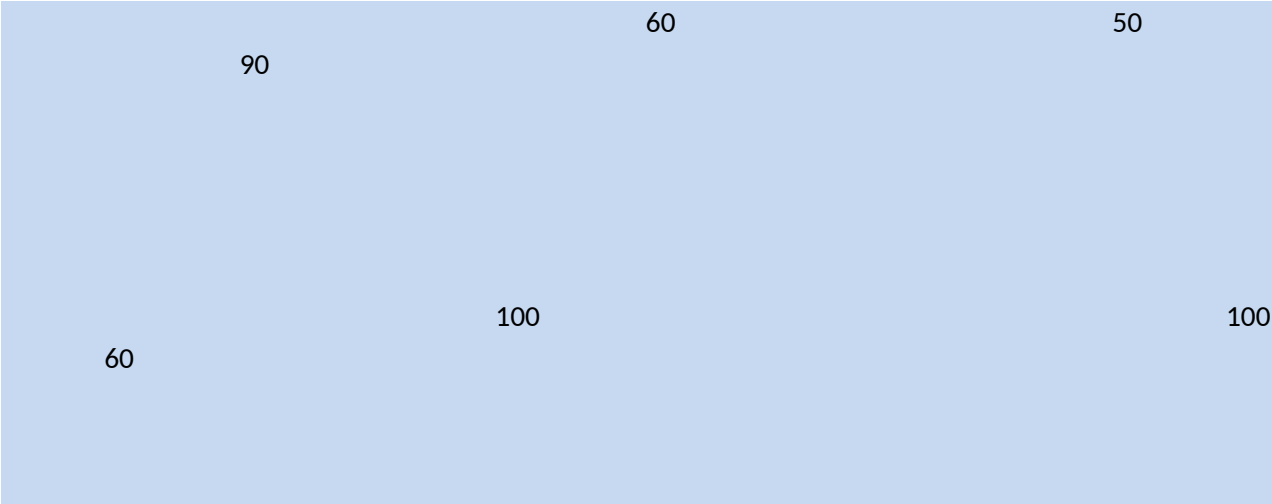
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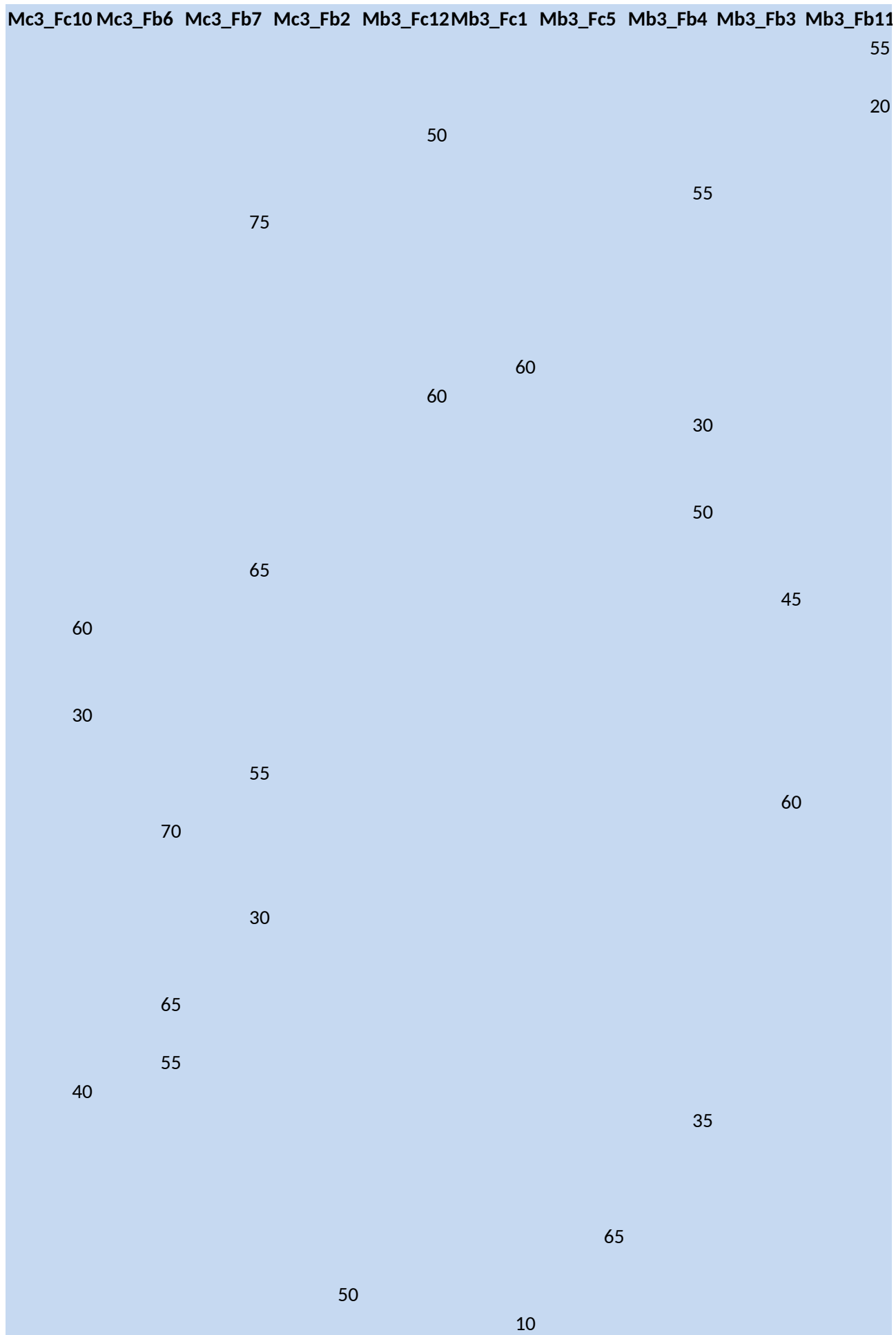






59.705882 62.777778 67.666667 65 55 58.888889 76.25 37.85714 48.33333





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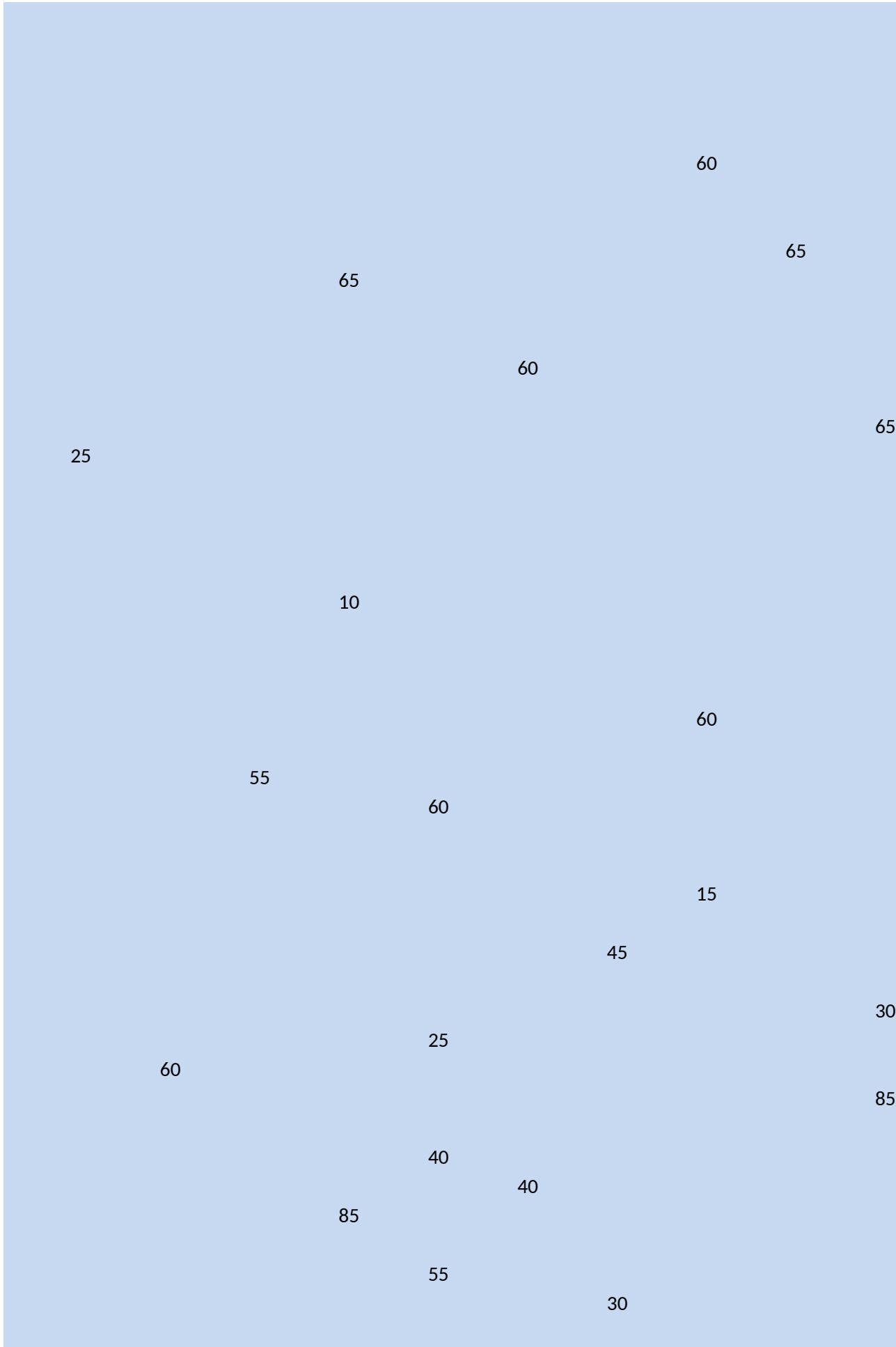
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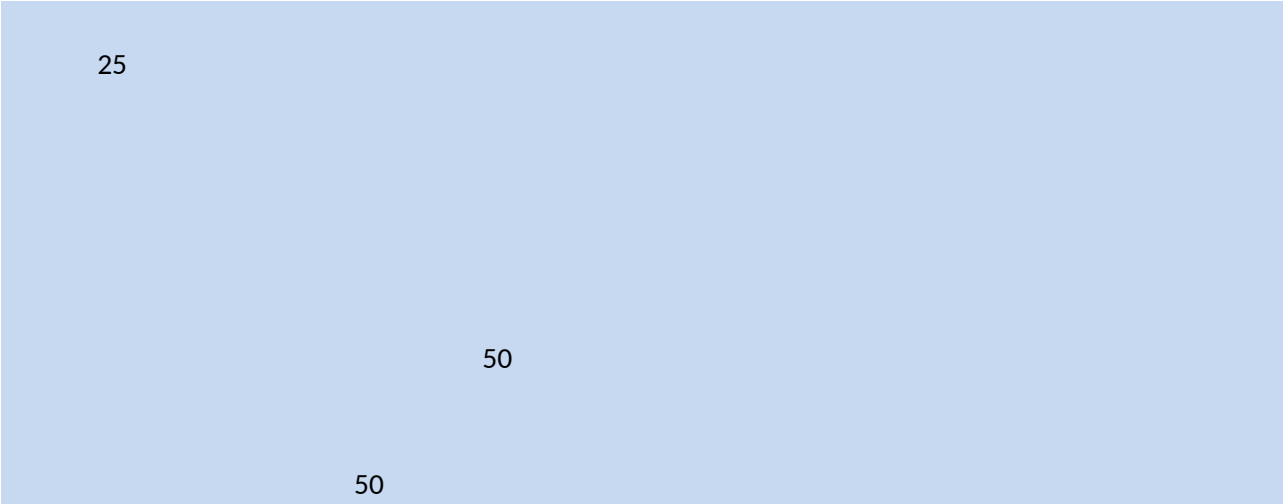
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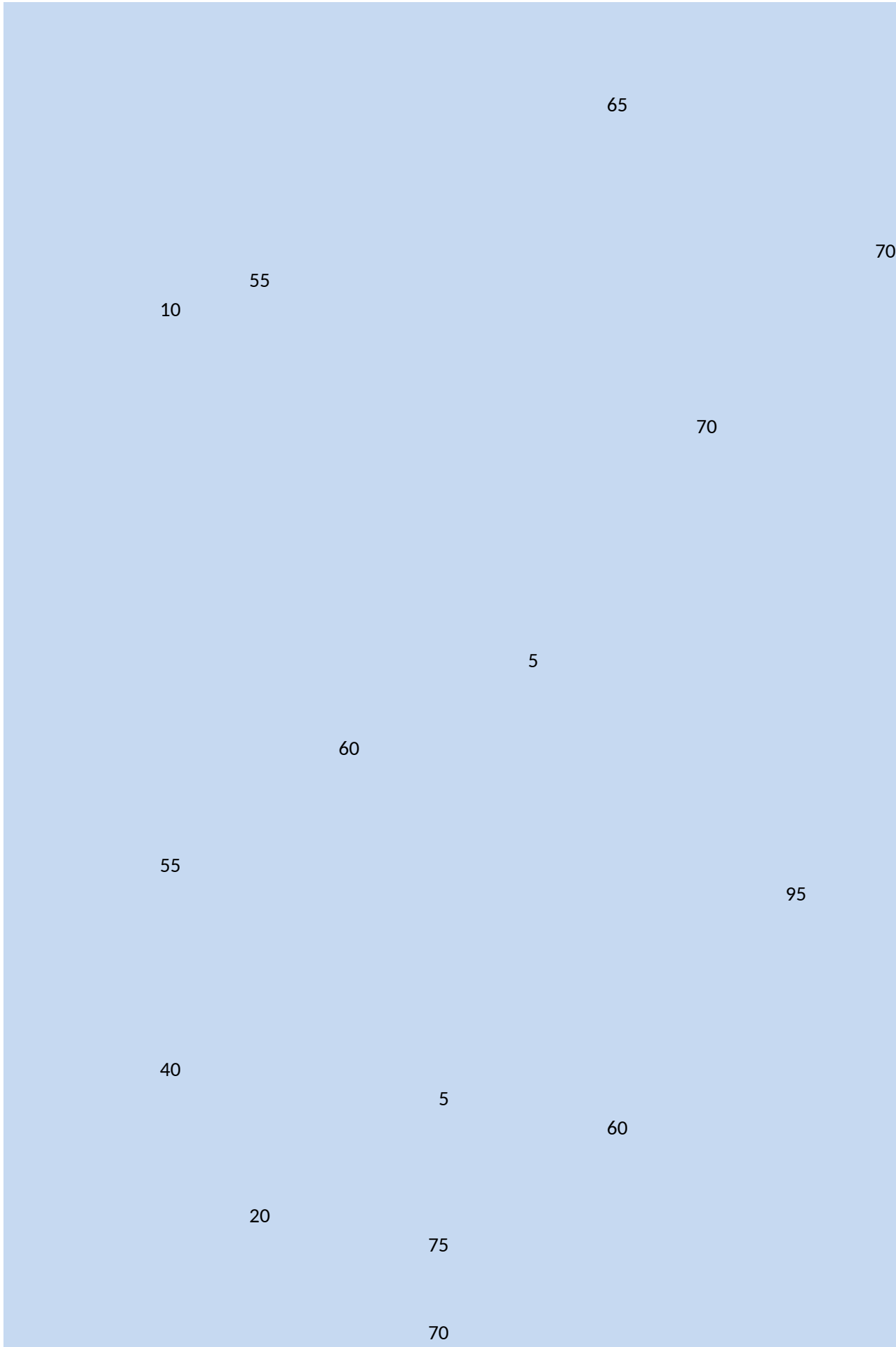
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43.88889 61.66667 47.35294 46 55 50.55556 55 54.54545 56.25 50







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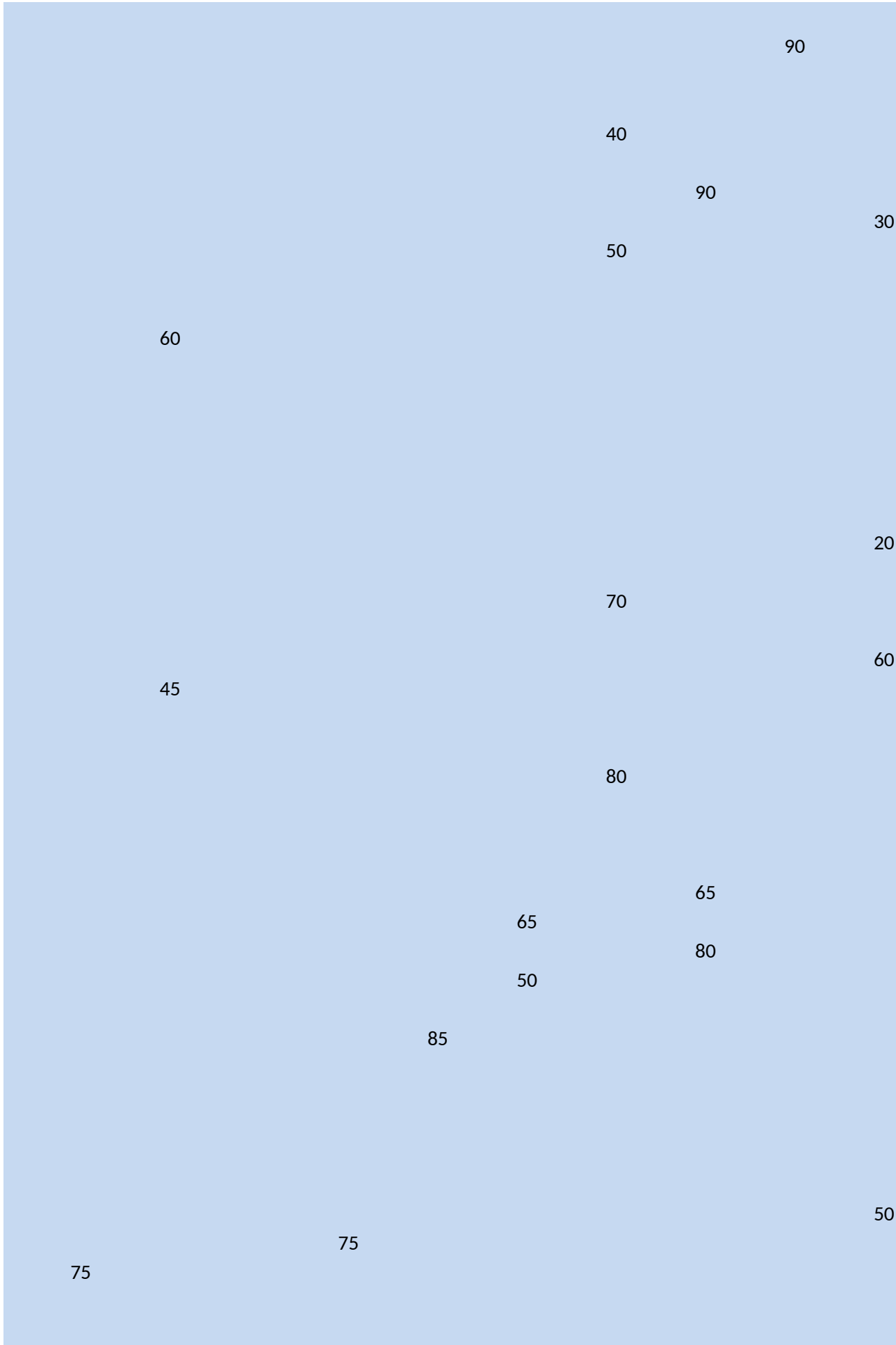
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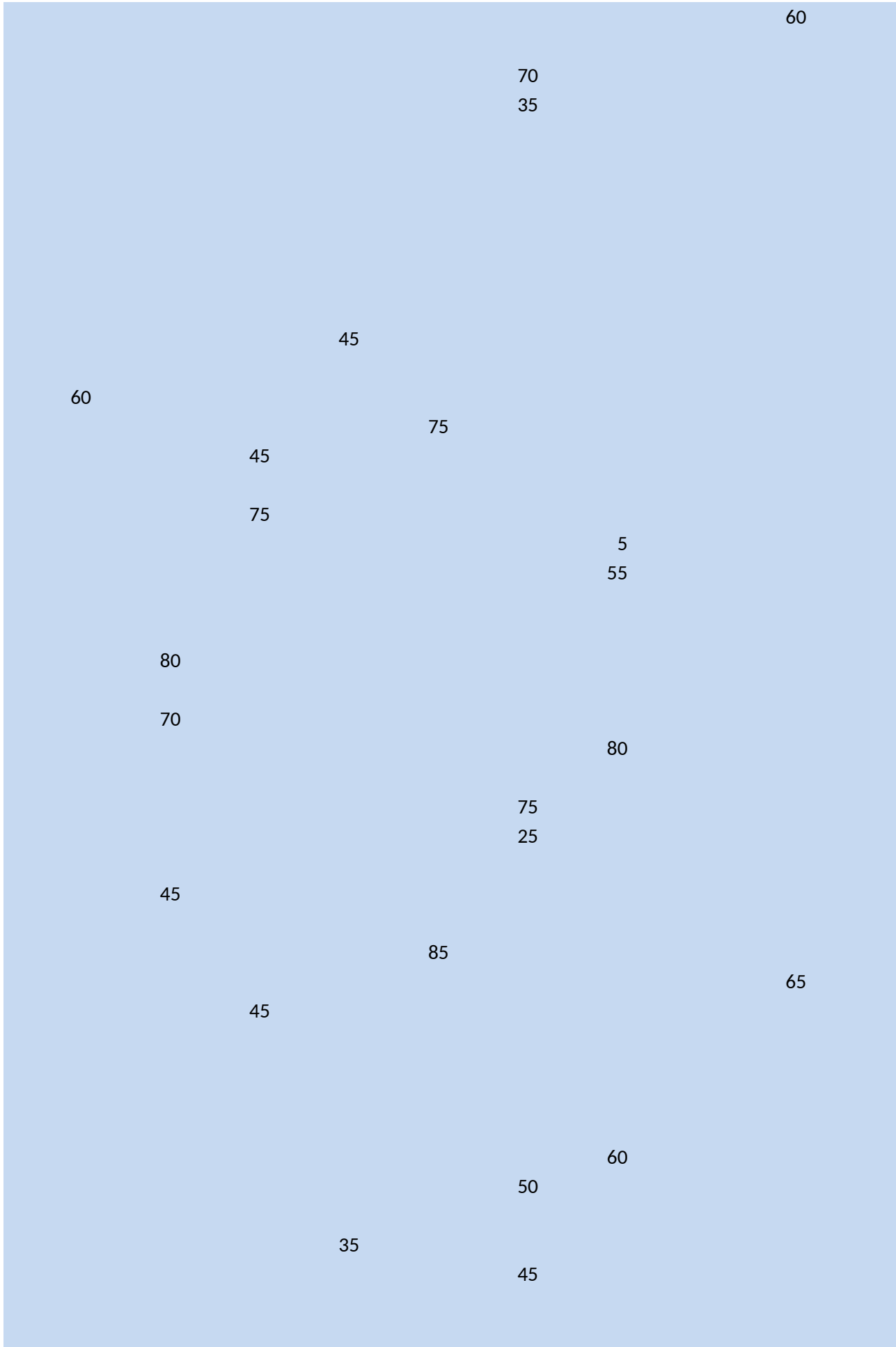
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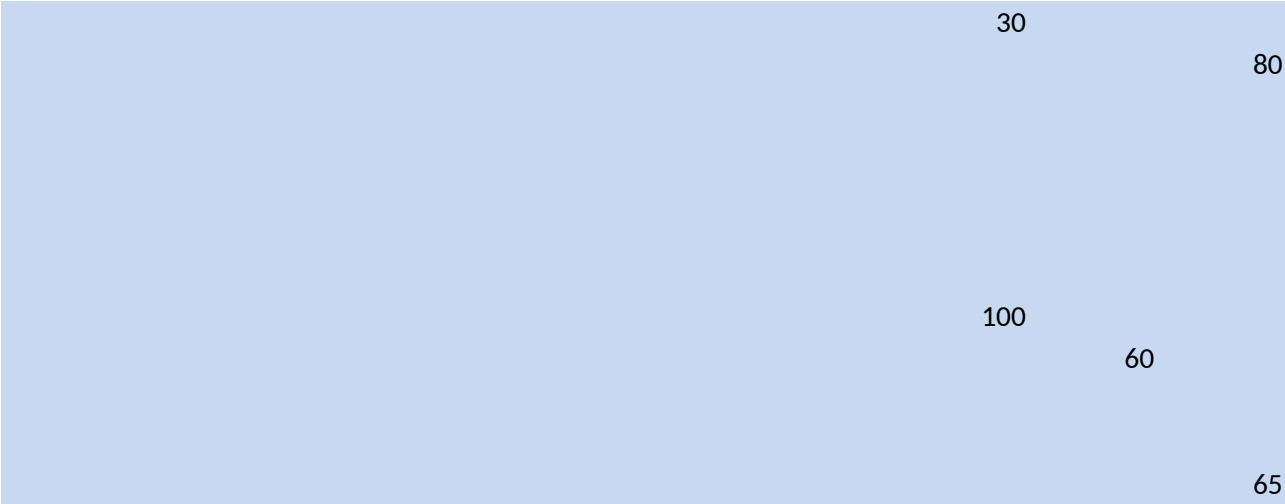
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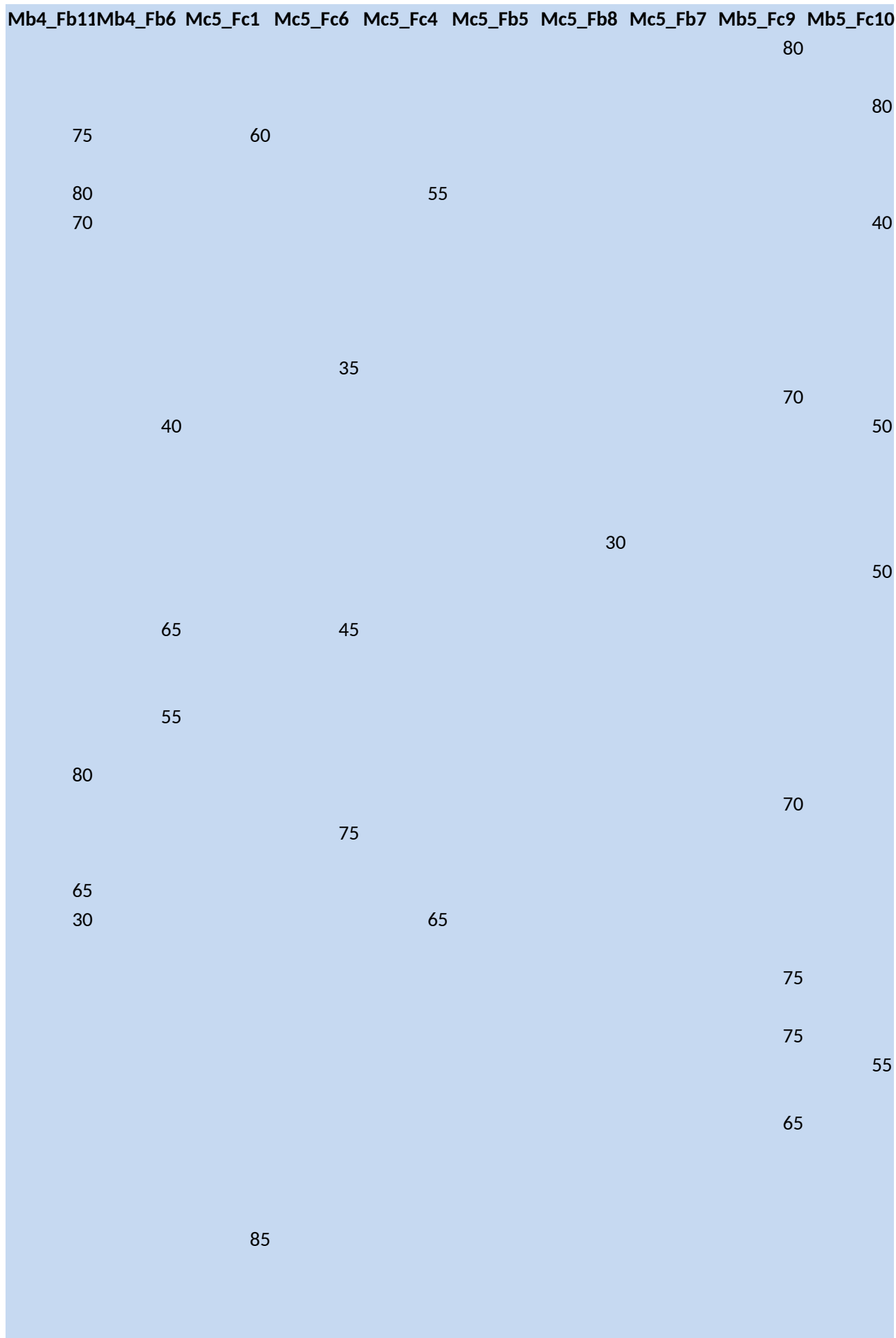






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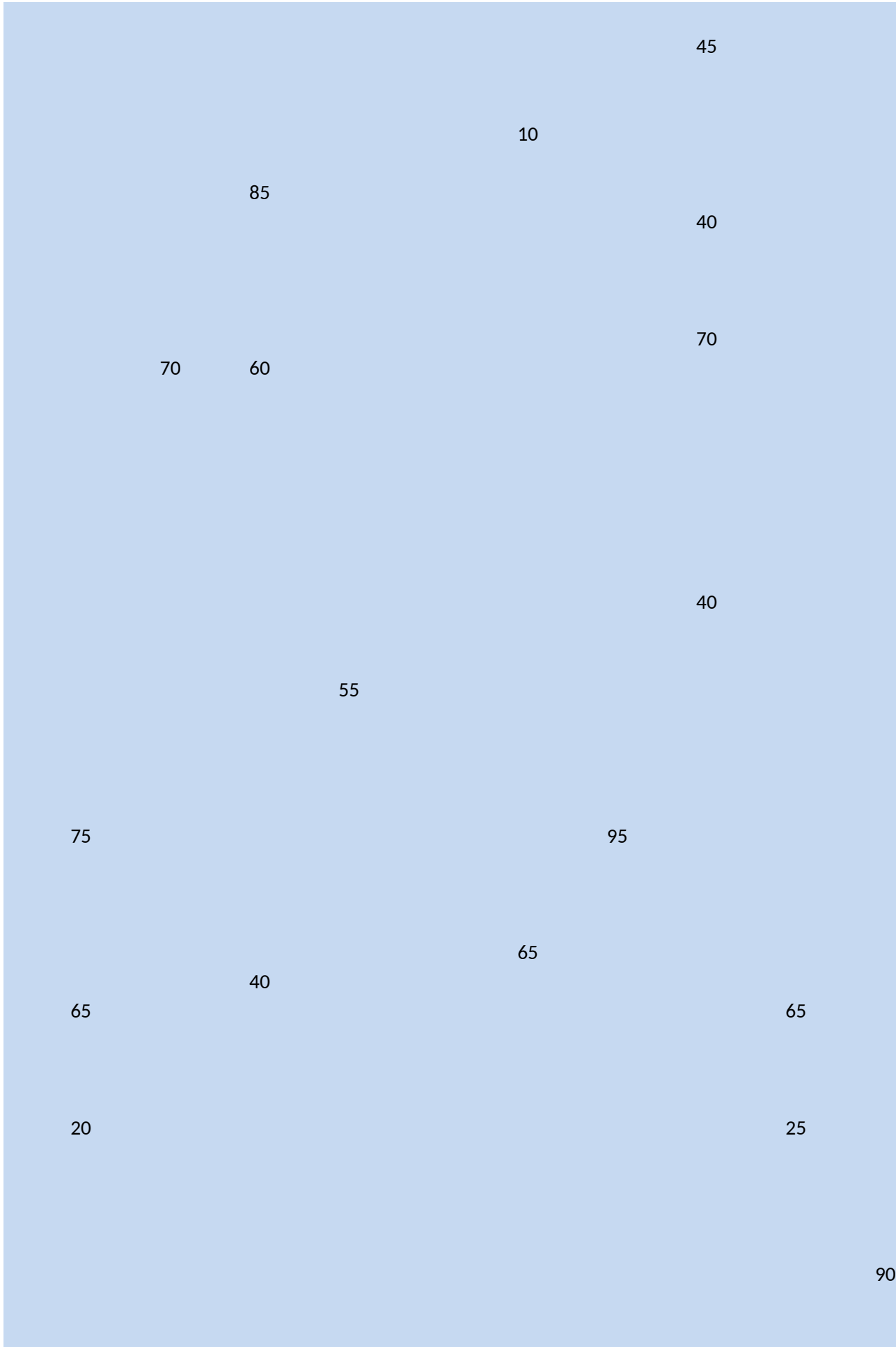
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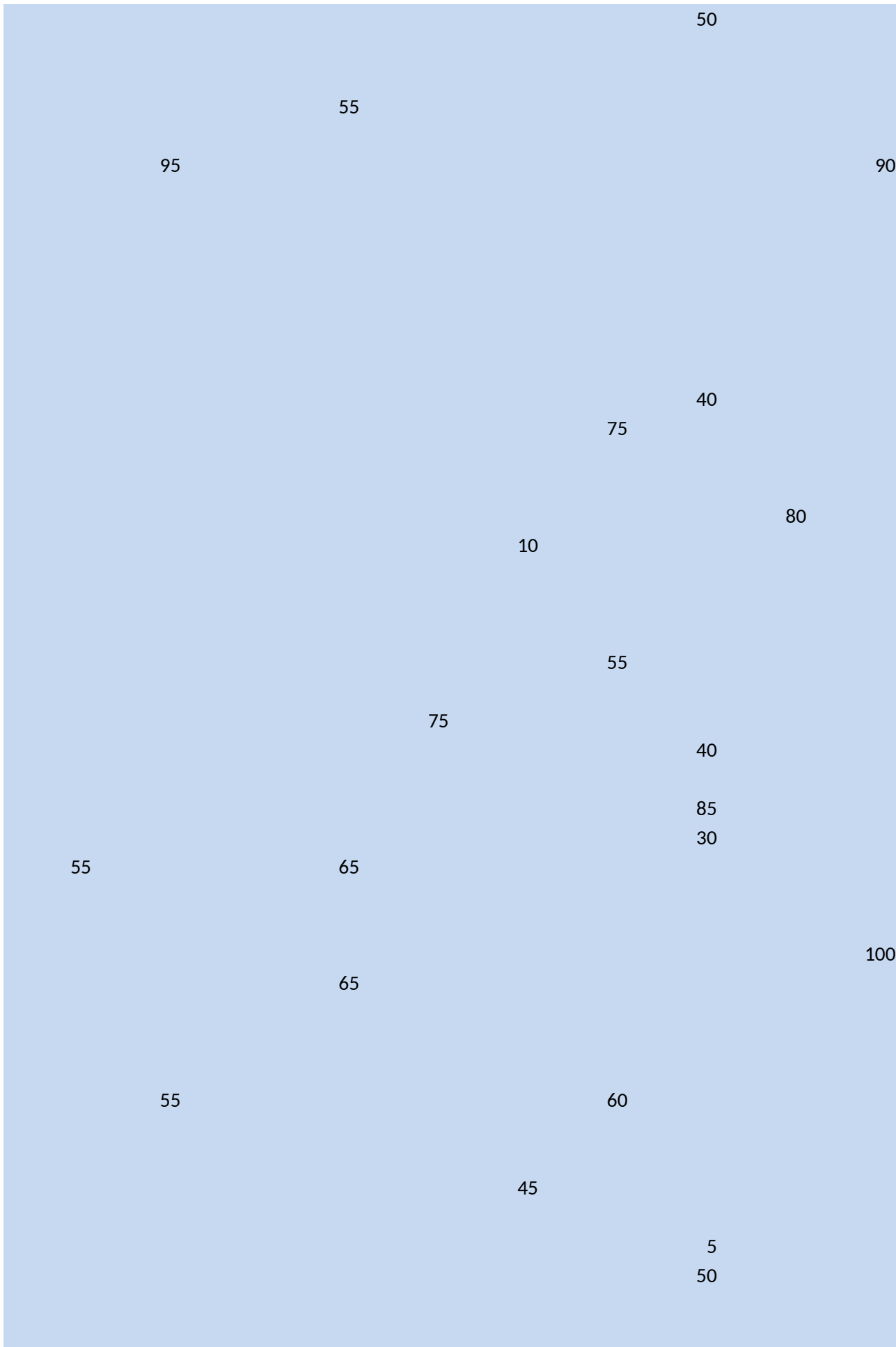
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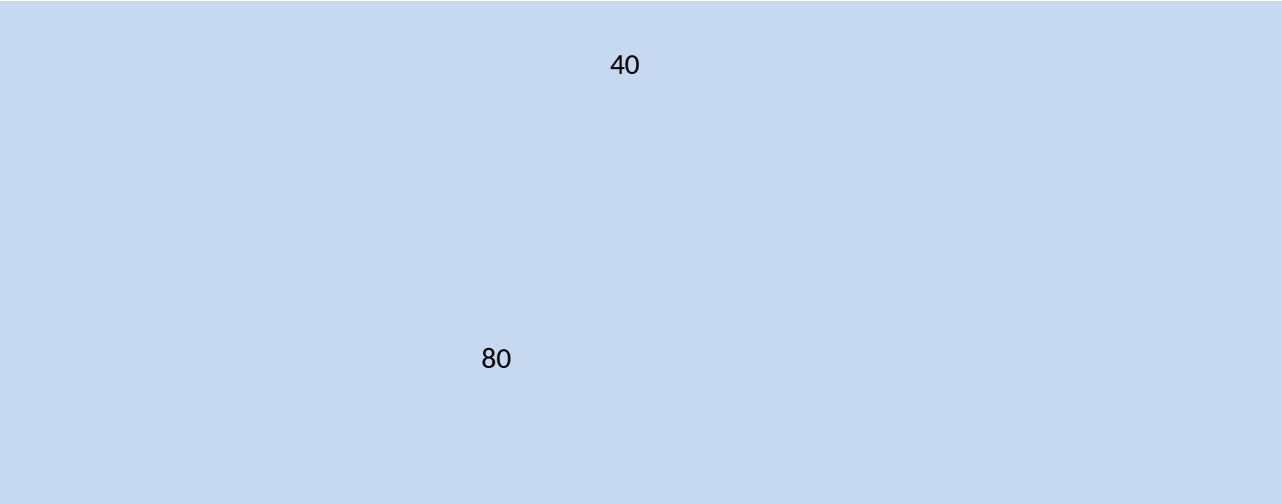
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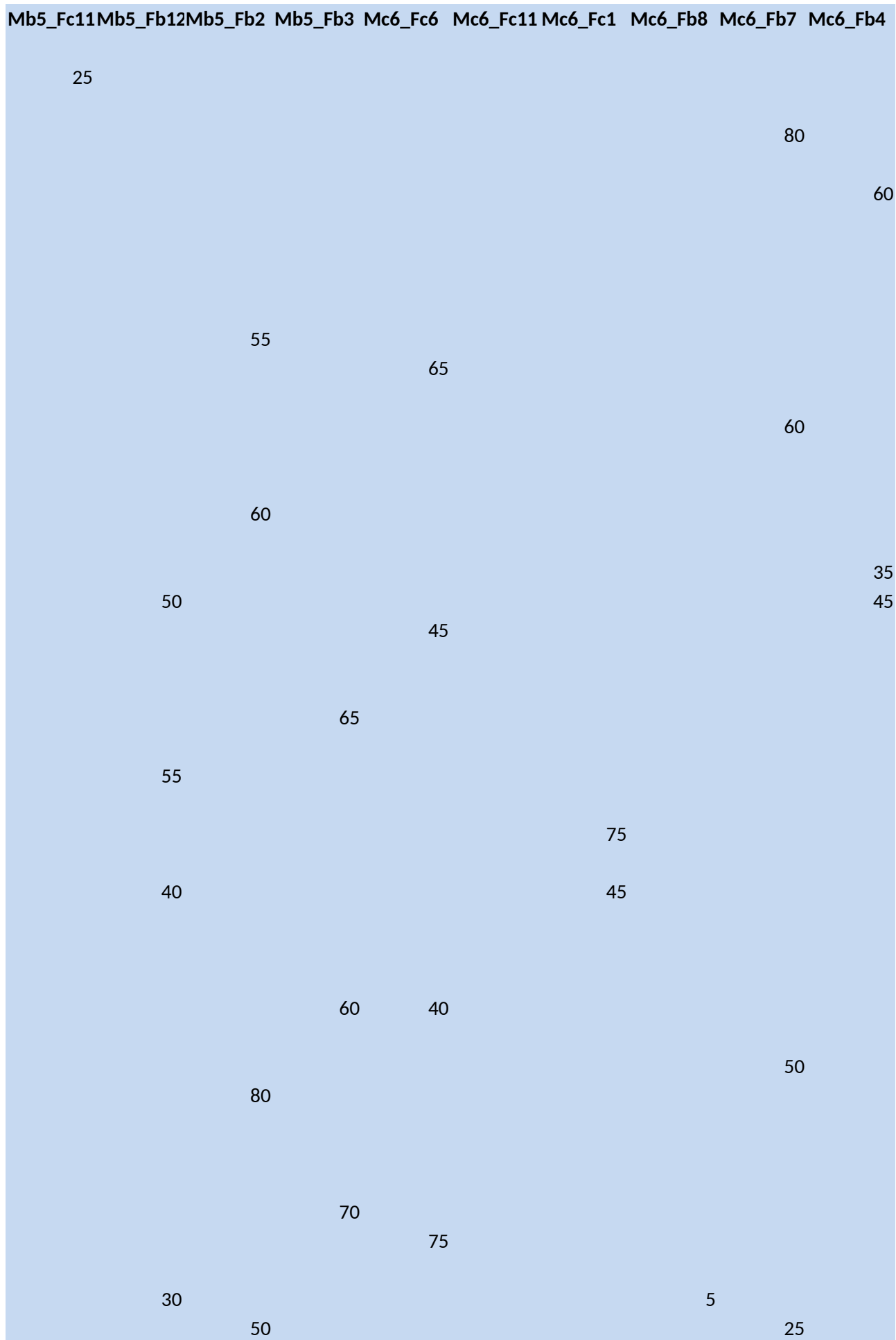






63.07692 62.85714 61.5 57.5 58 54 60 47.33333 70.83333 69.375





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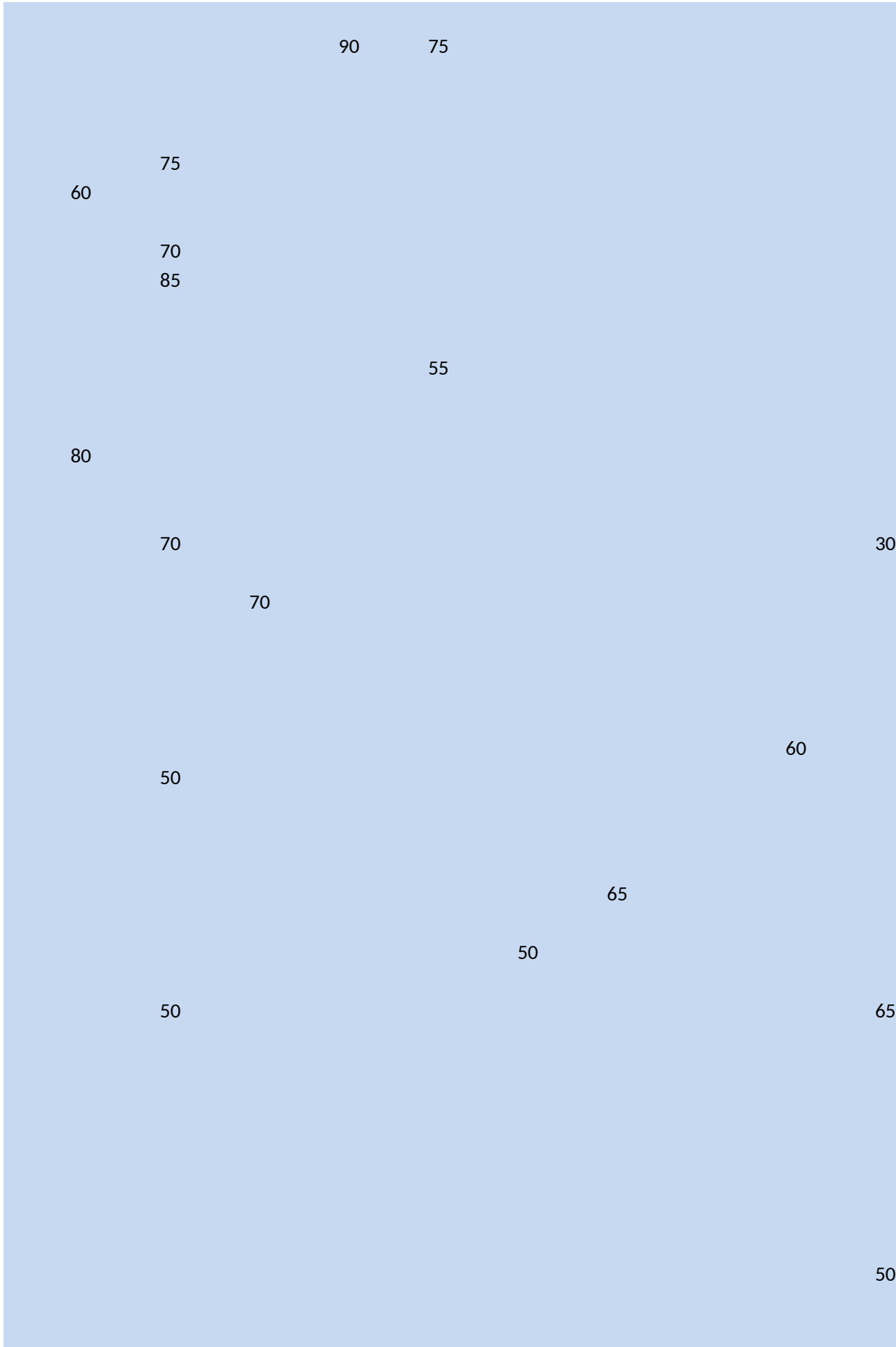
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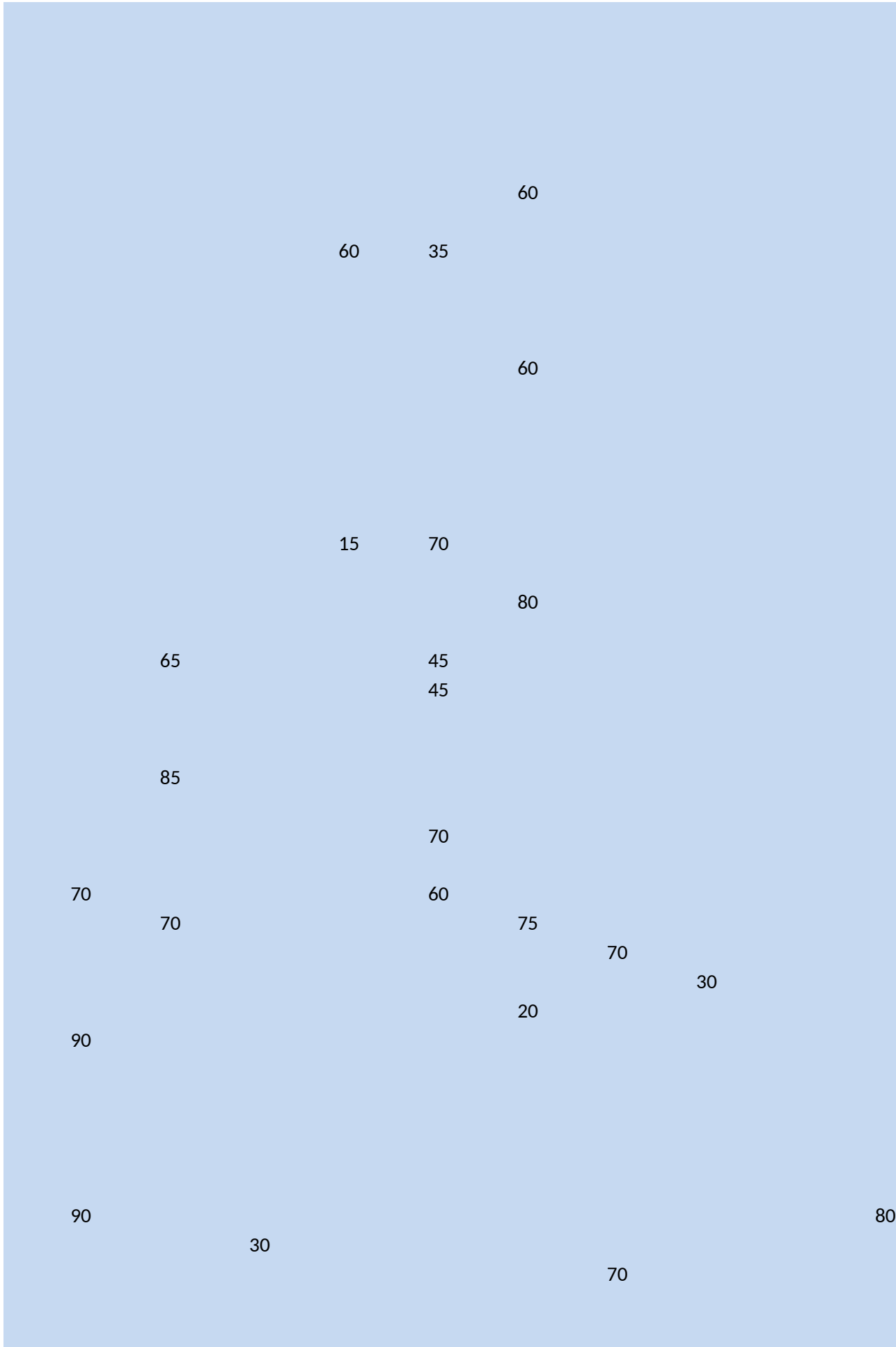
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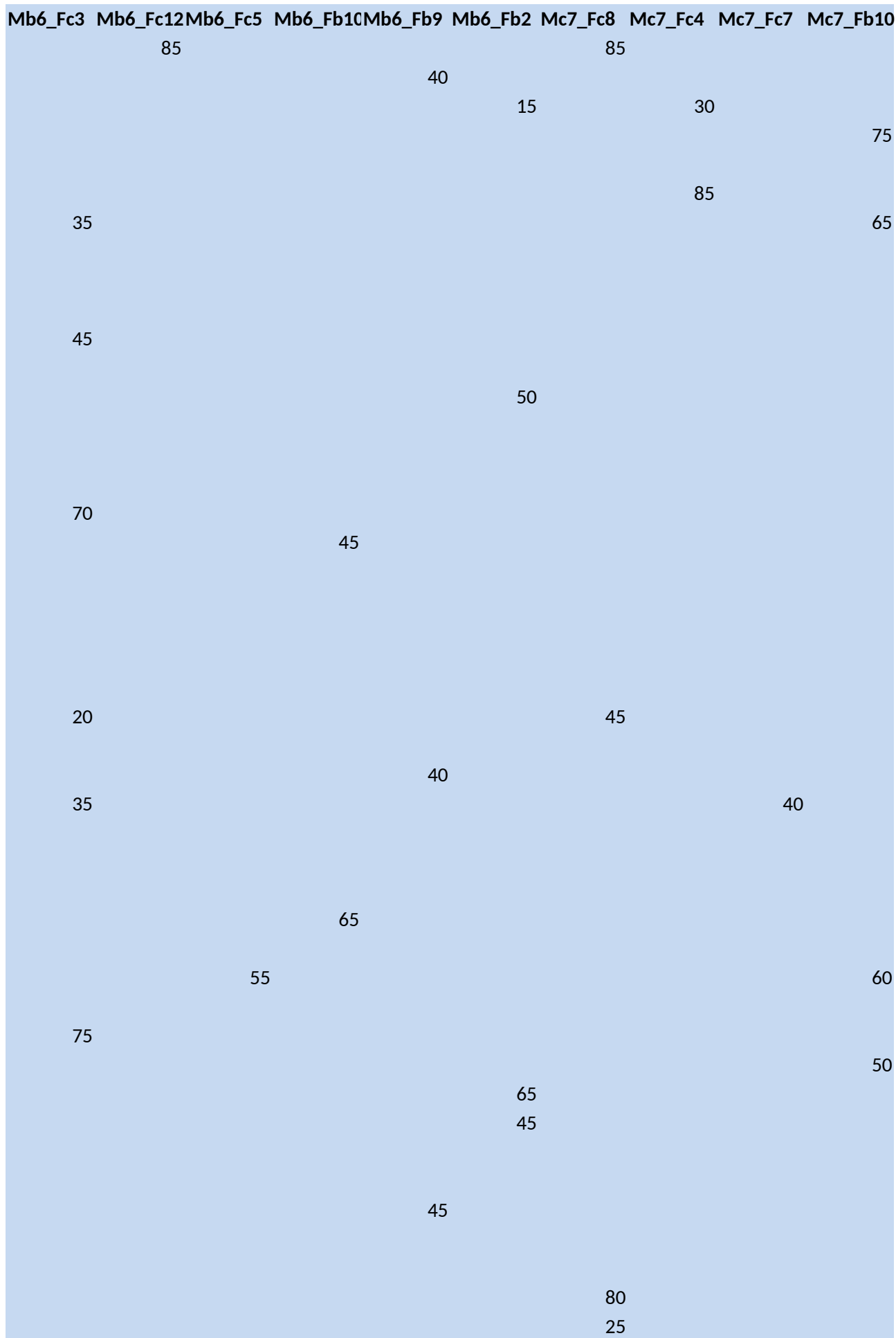
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67.14286 60.625 60.55556 65.83333 52.8125 38.18182 65.55556 45 60.625 51.5





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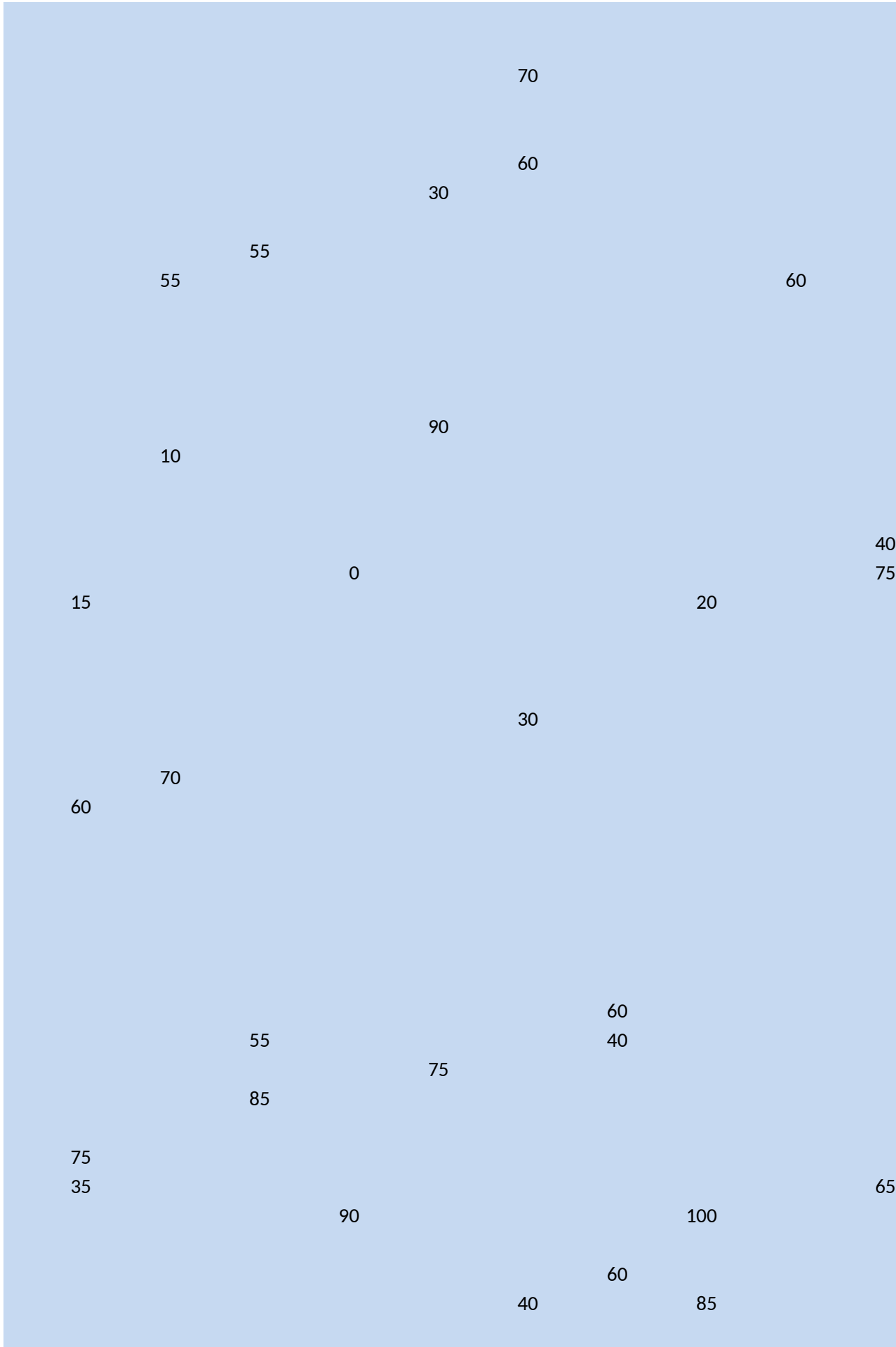
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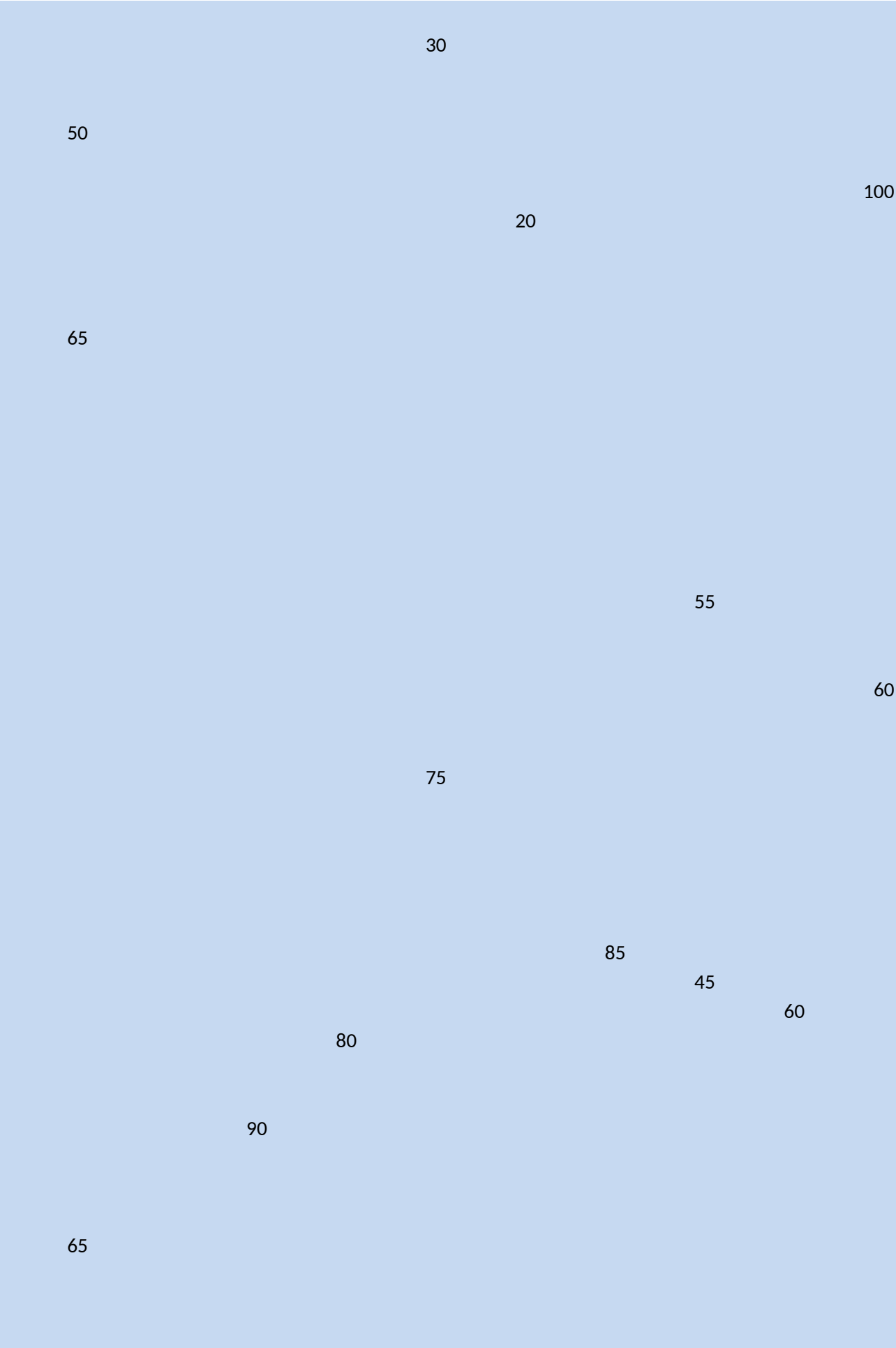
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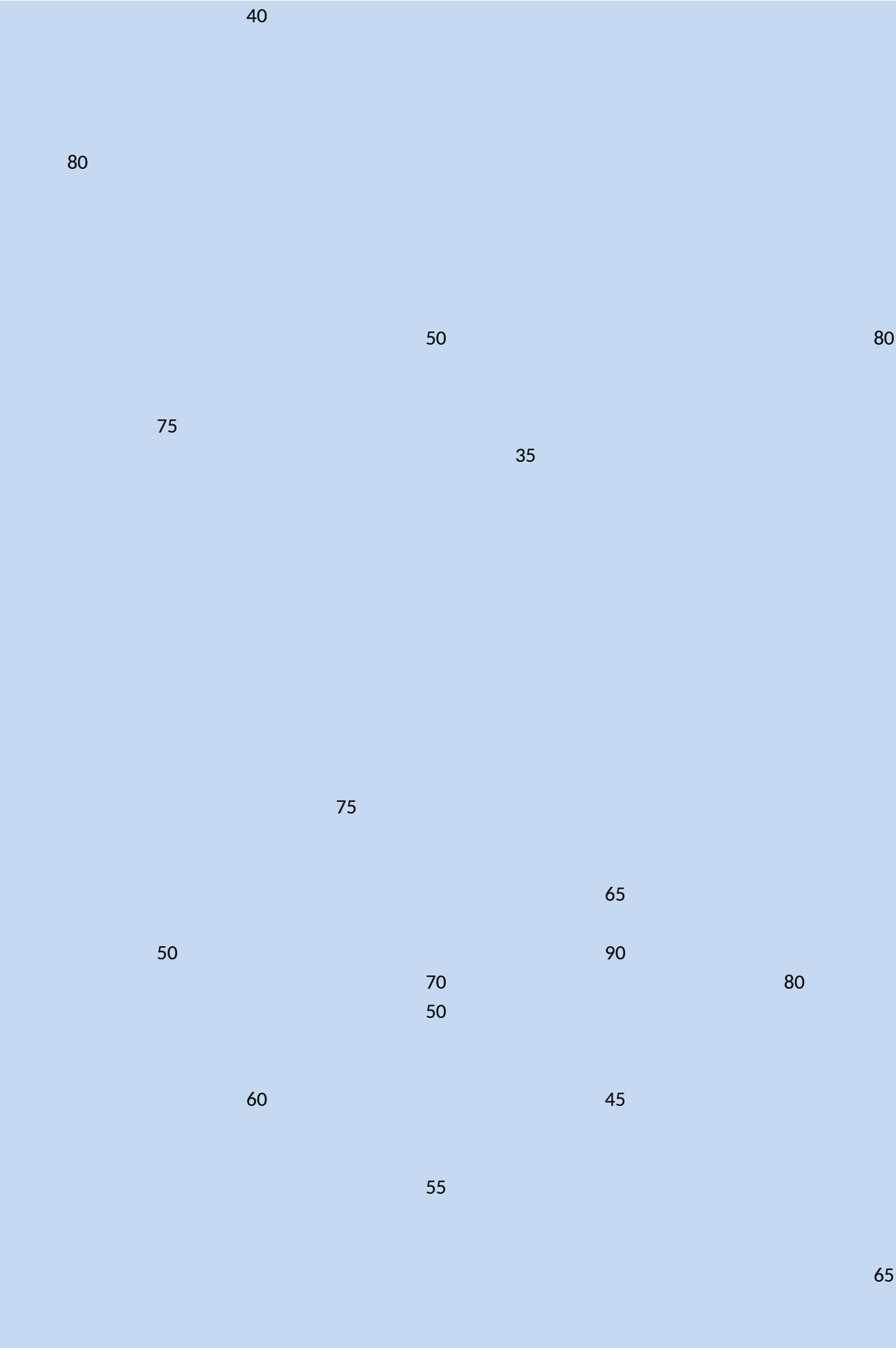
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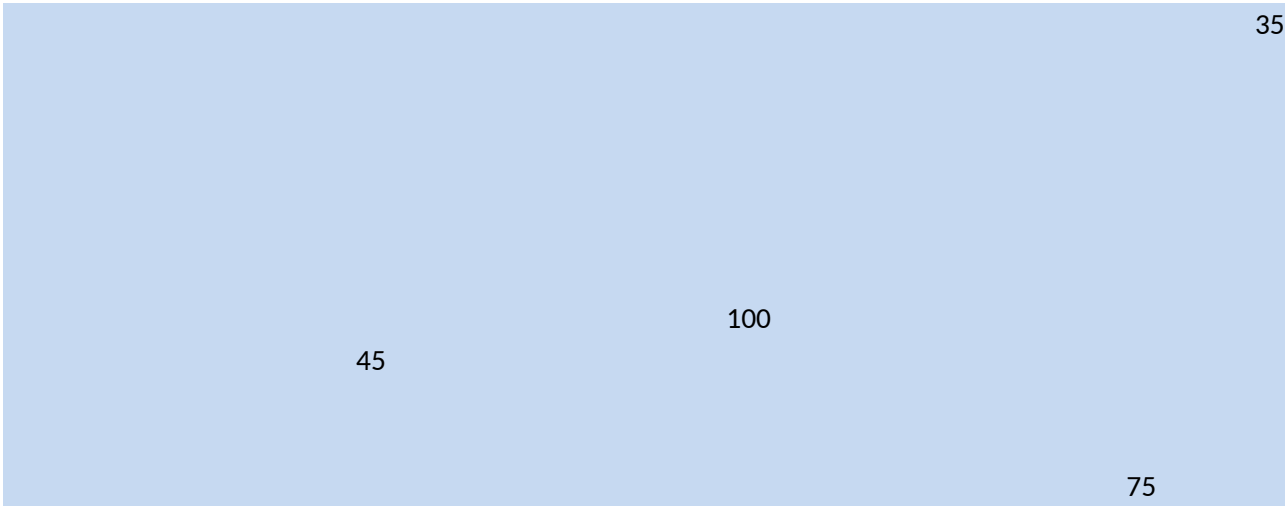
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51.78571 54.44444 57 60.71429 56.78571 43.84615 59.23077 61.25 62.14286 66.53846



Mc7_Fb11Mc7_Fb12Mb7_Fc1 Mb7_Fc2 Mb7_Fc9 Mb7_Fb6 Mb7_Fb5 Mb7_Fb3 Mc8_Fc5 Mc8_Fc4

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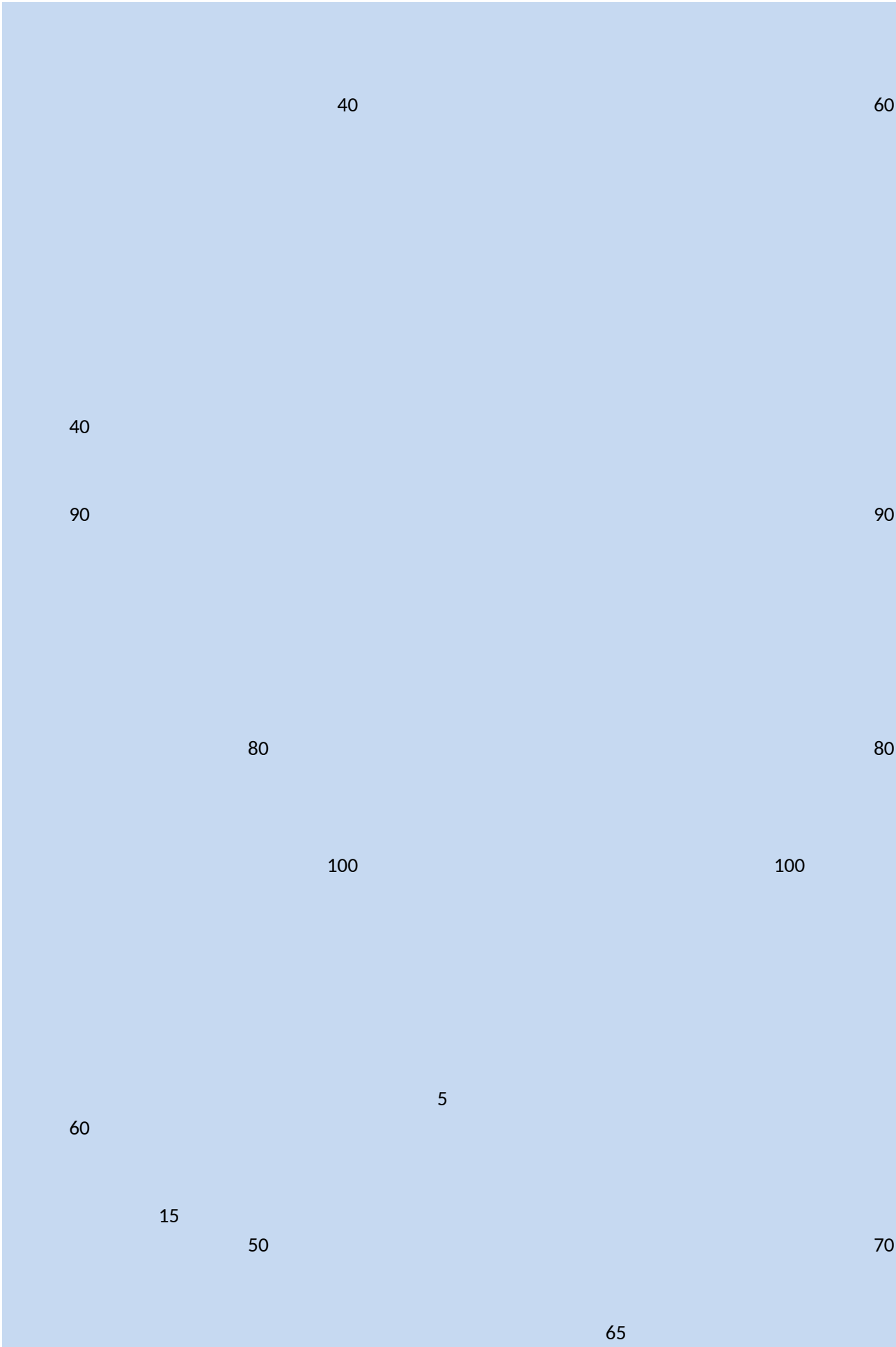
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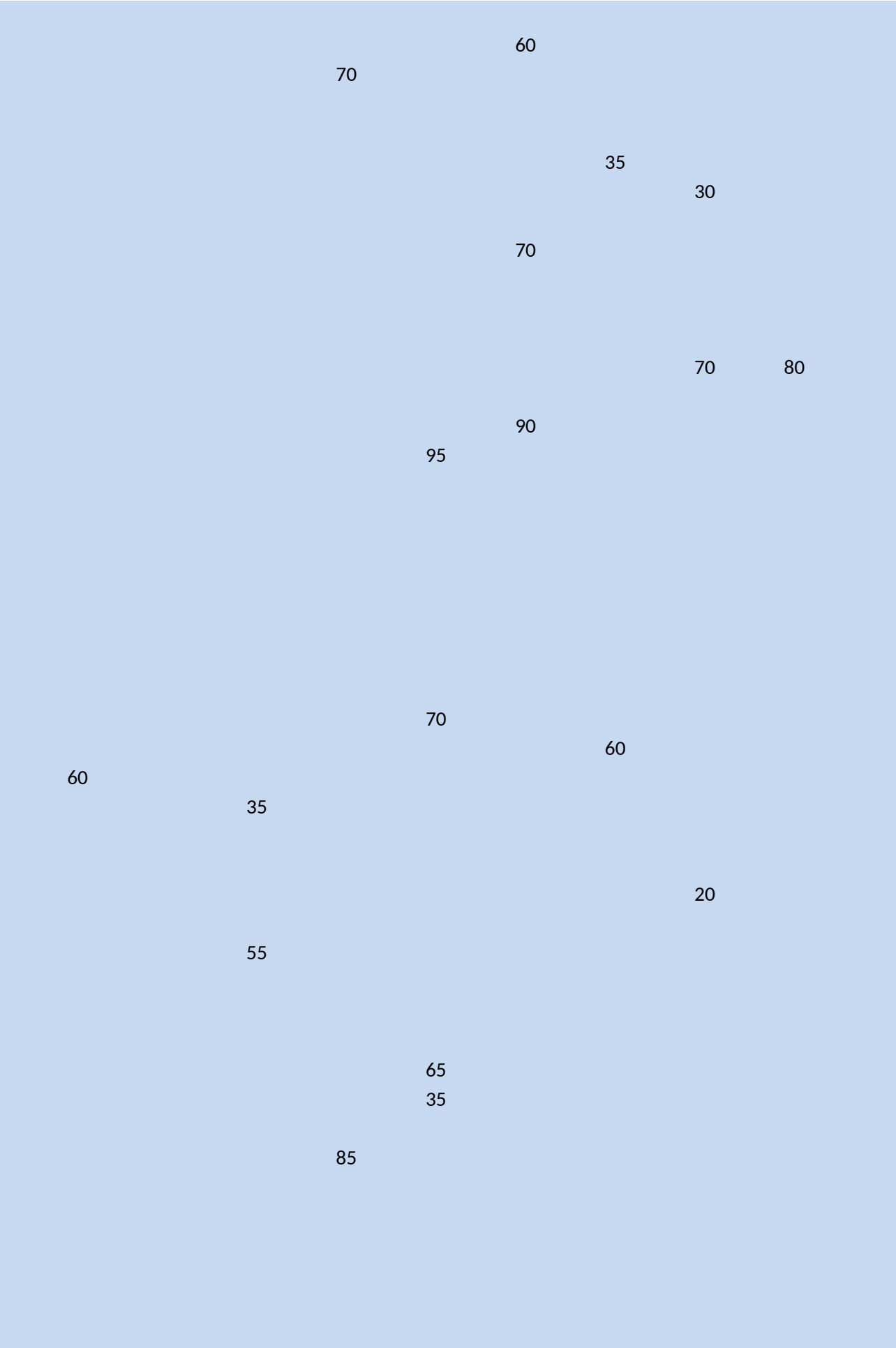
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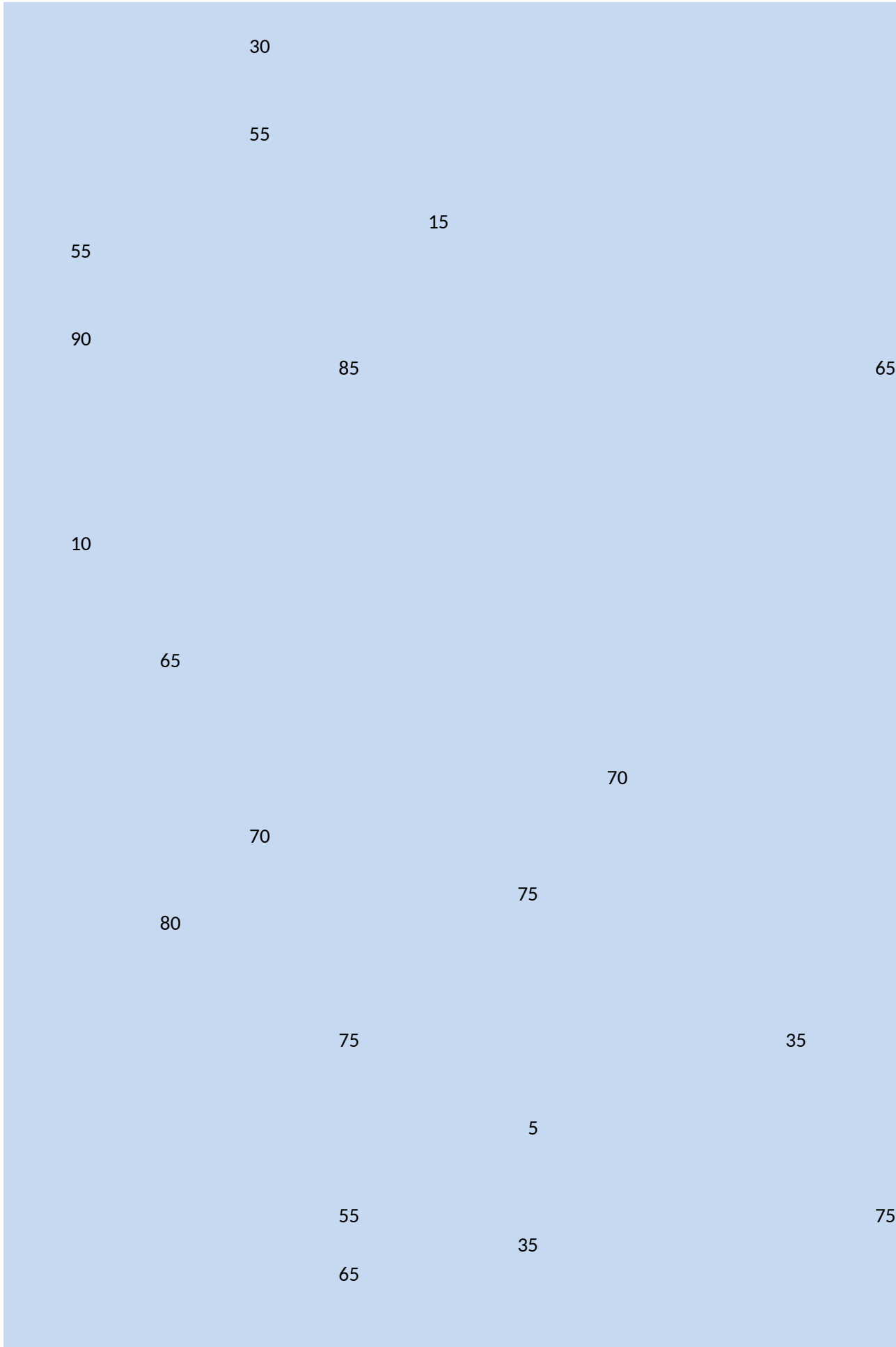
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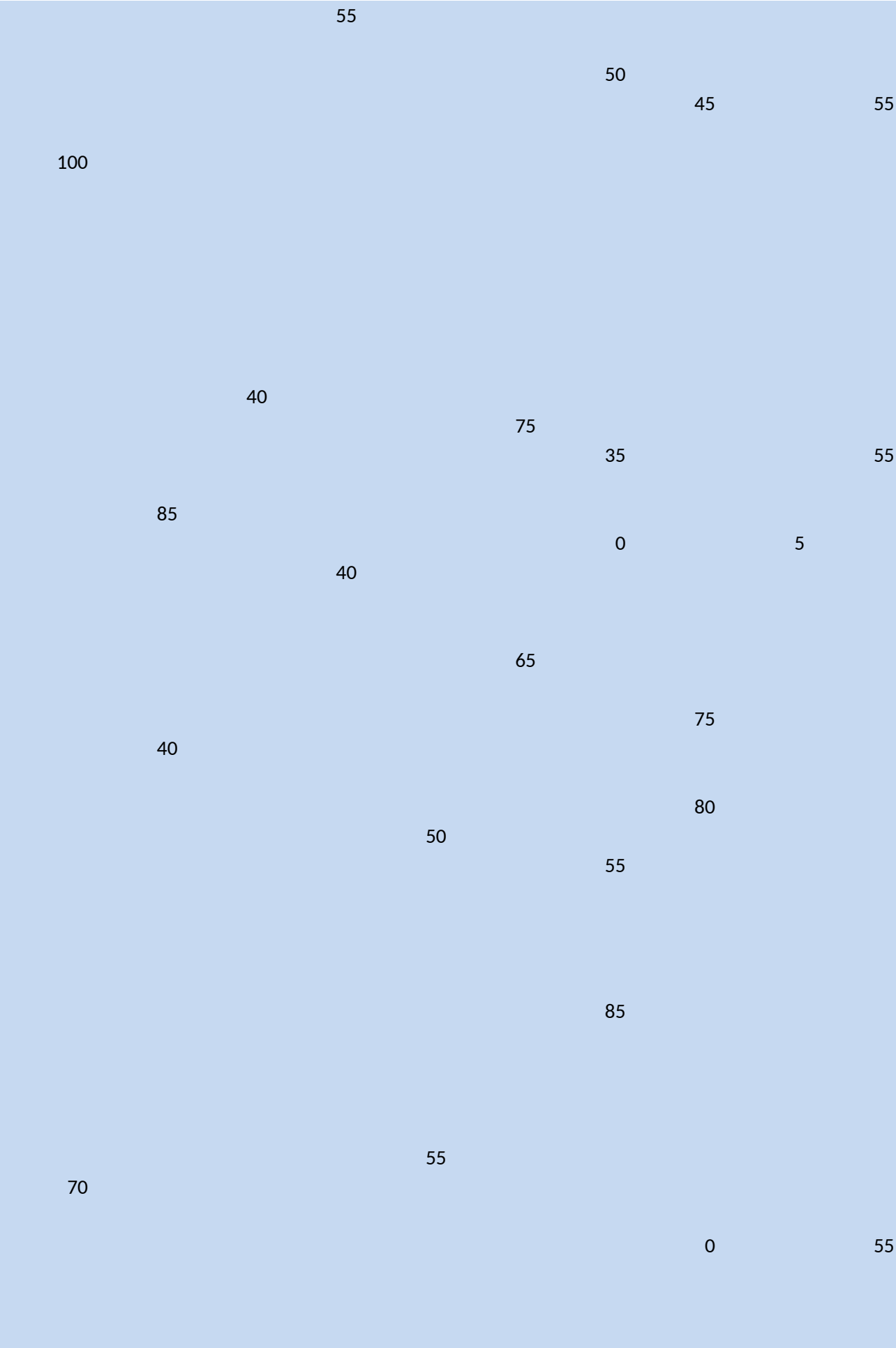
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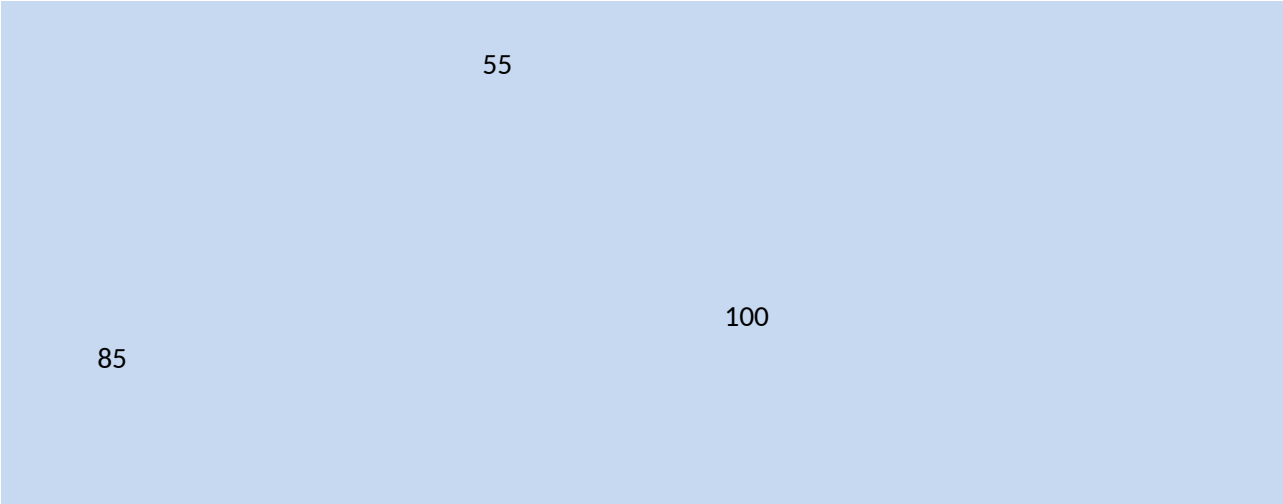
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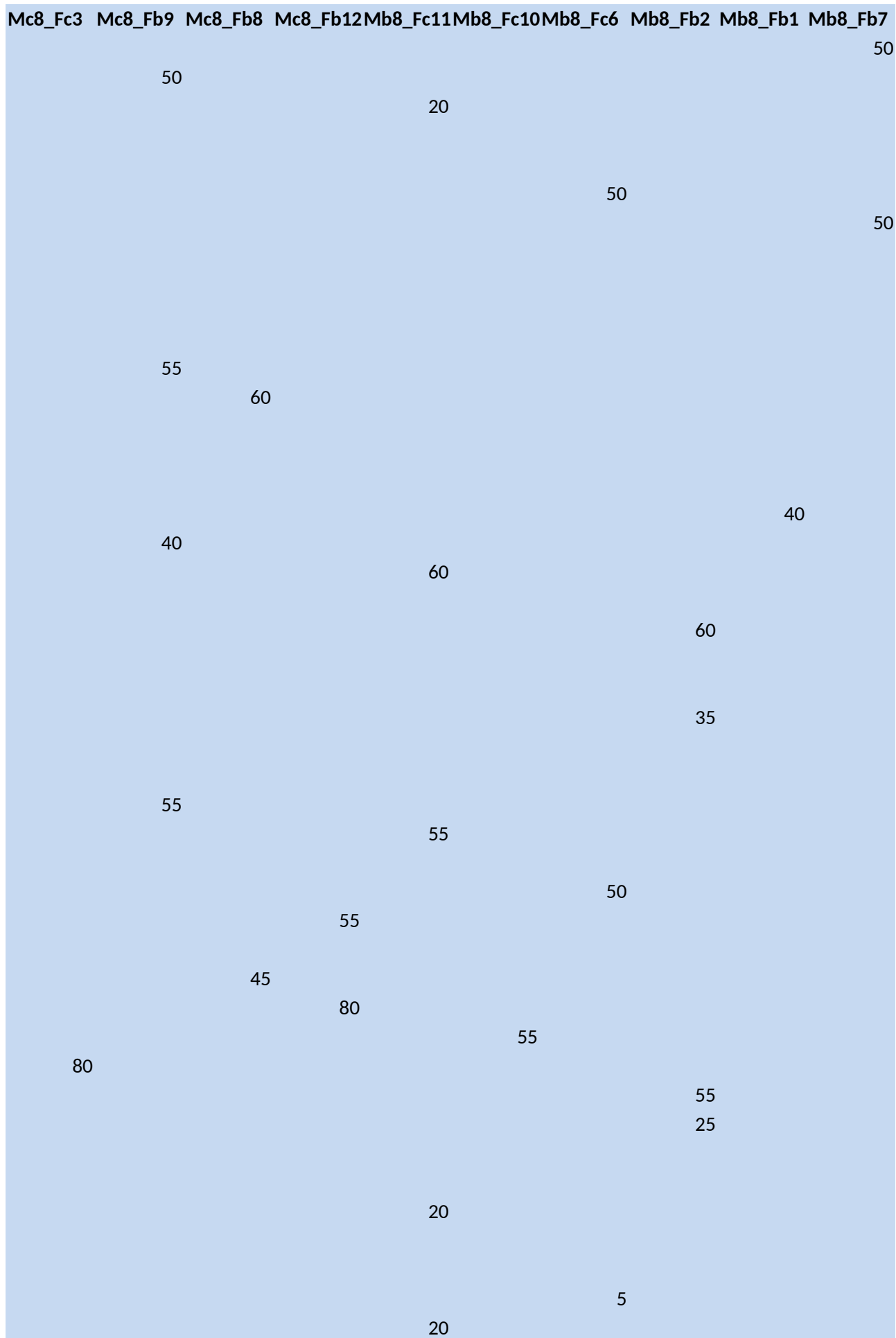






63.46154 55 51.36364 63.33333 46.15385 63.33333 54.09091 43.75 57.5 69.61538





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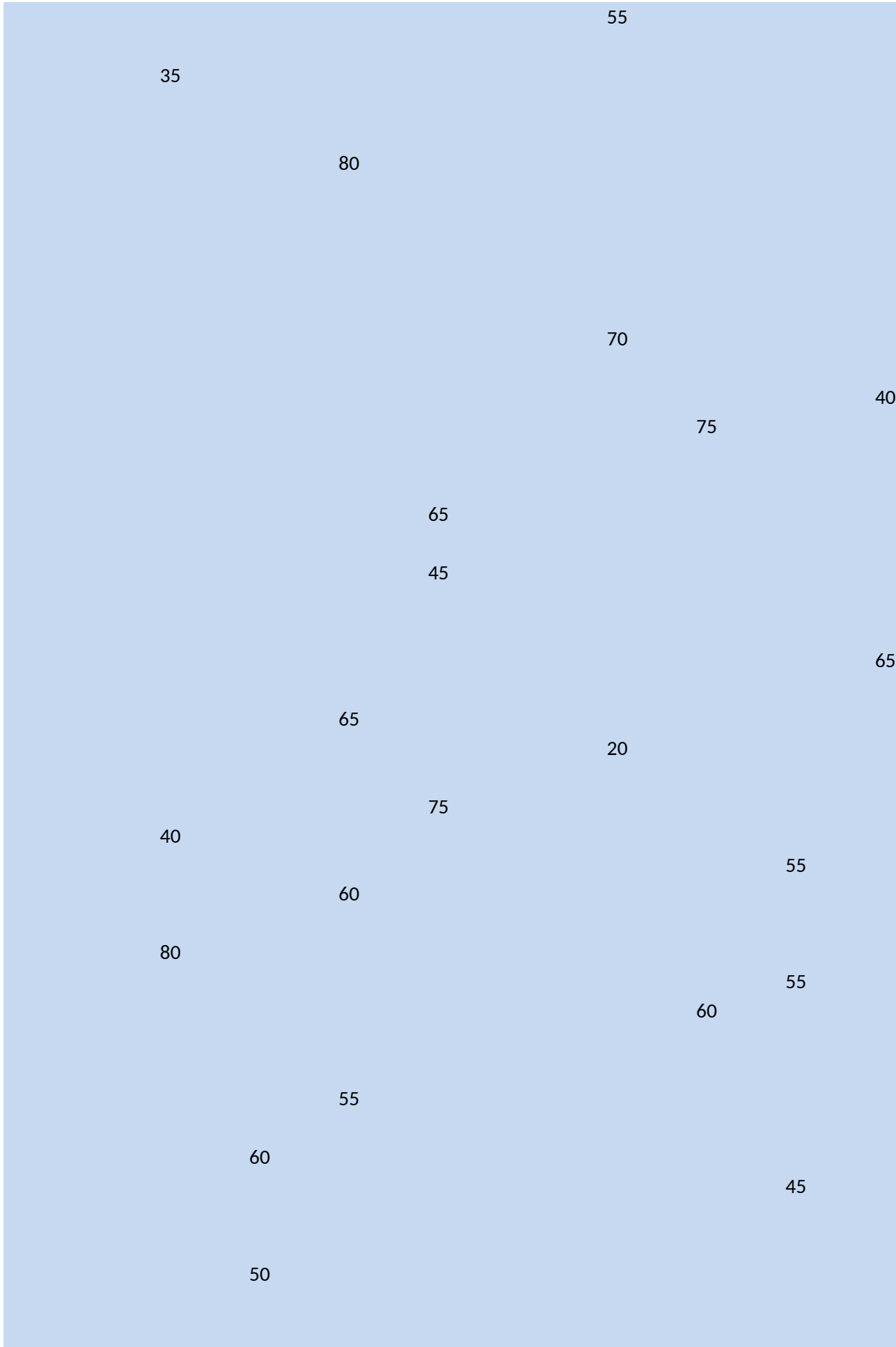
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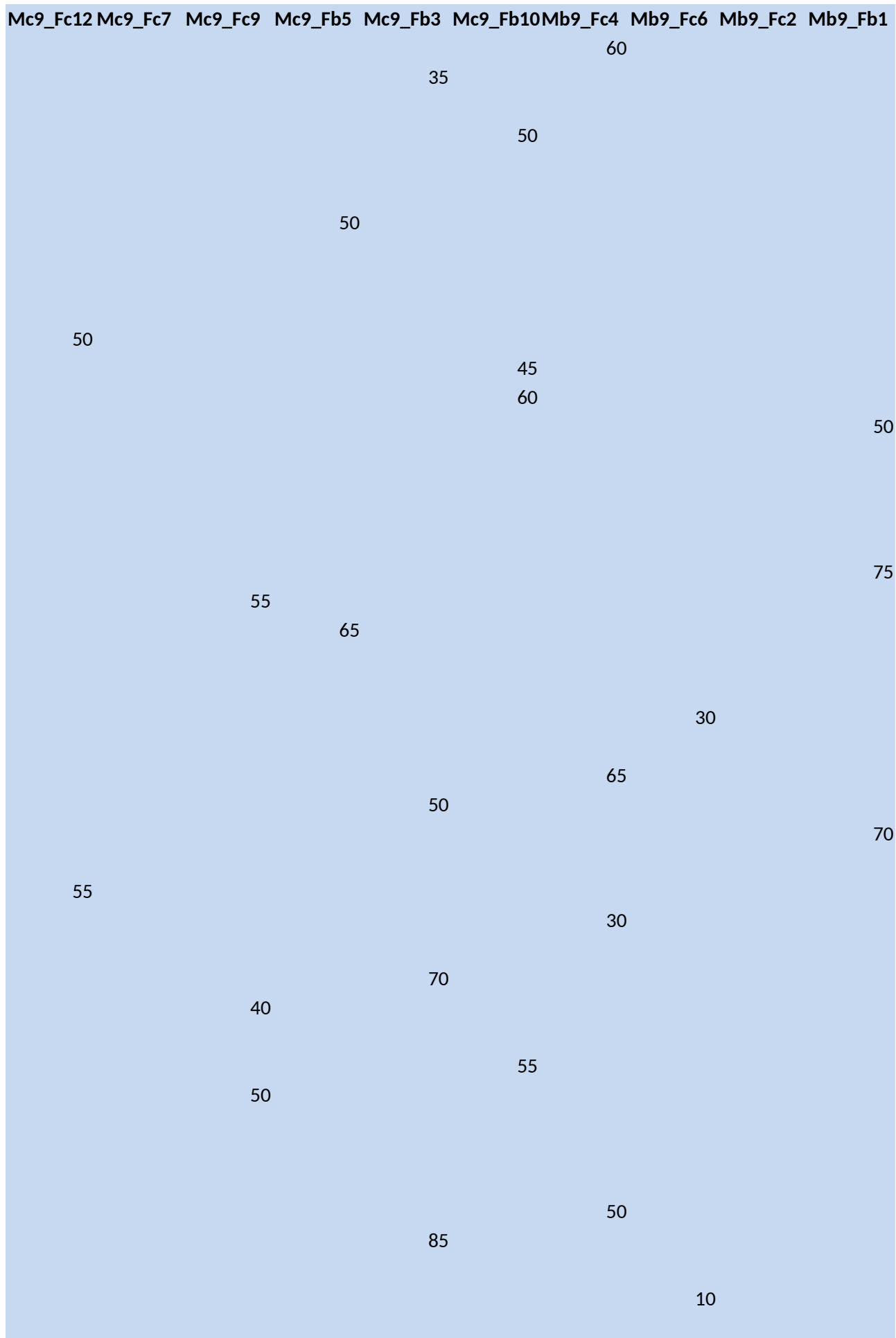
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52.14286 59.61538 57 54.09091 46.92308 50 40.71429 51.92308 52.5 61.42857





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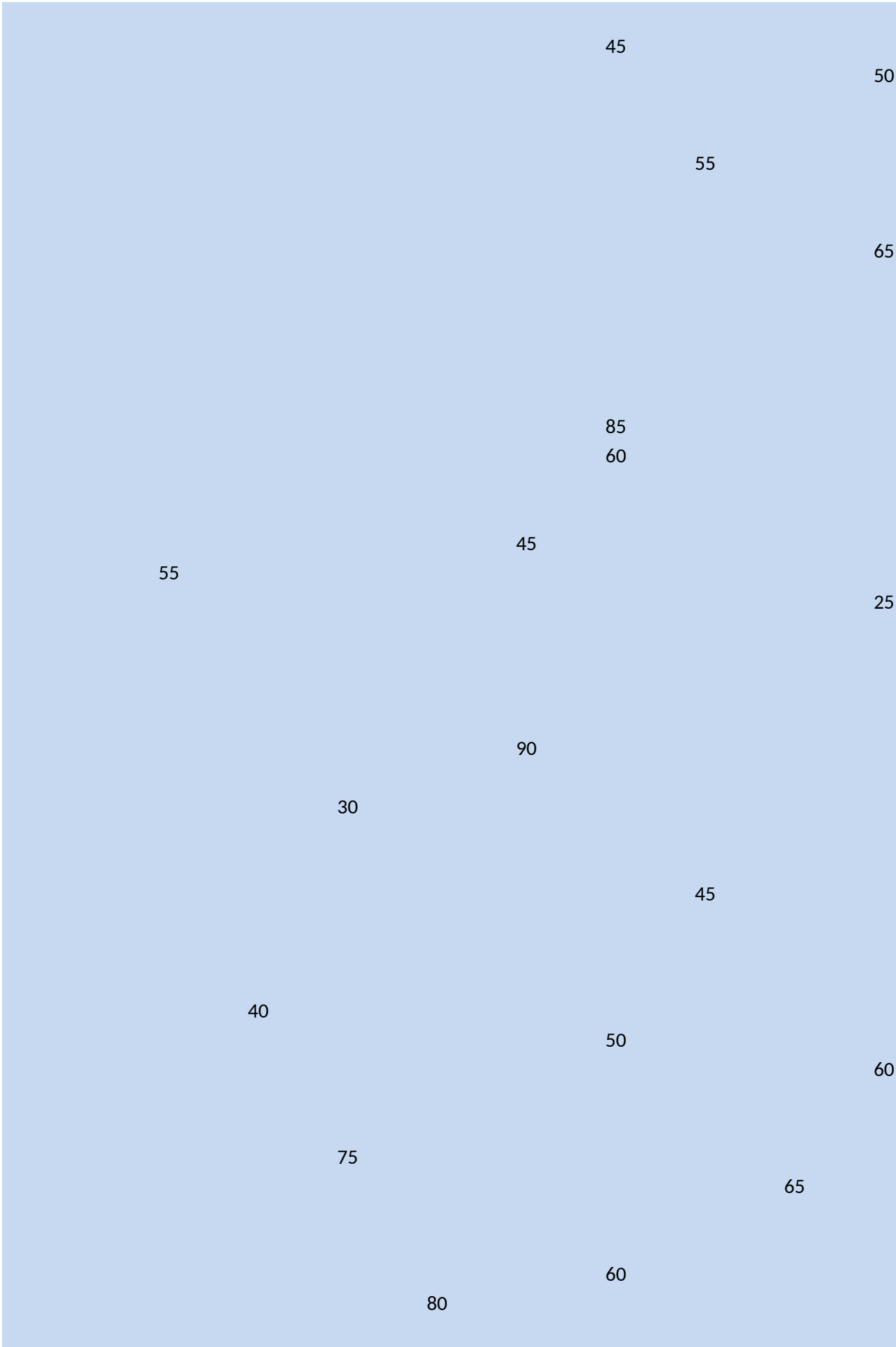
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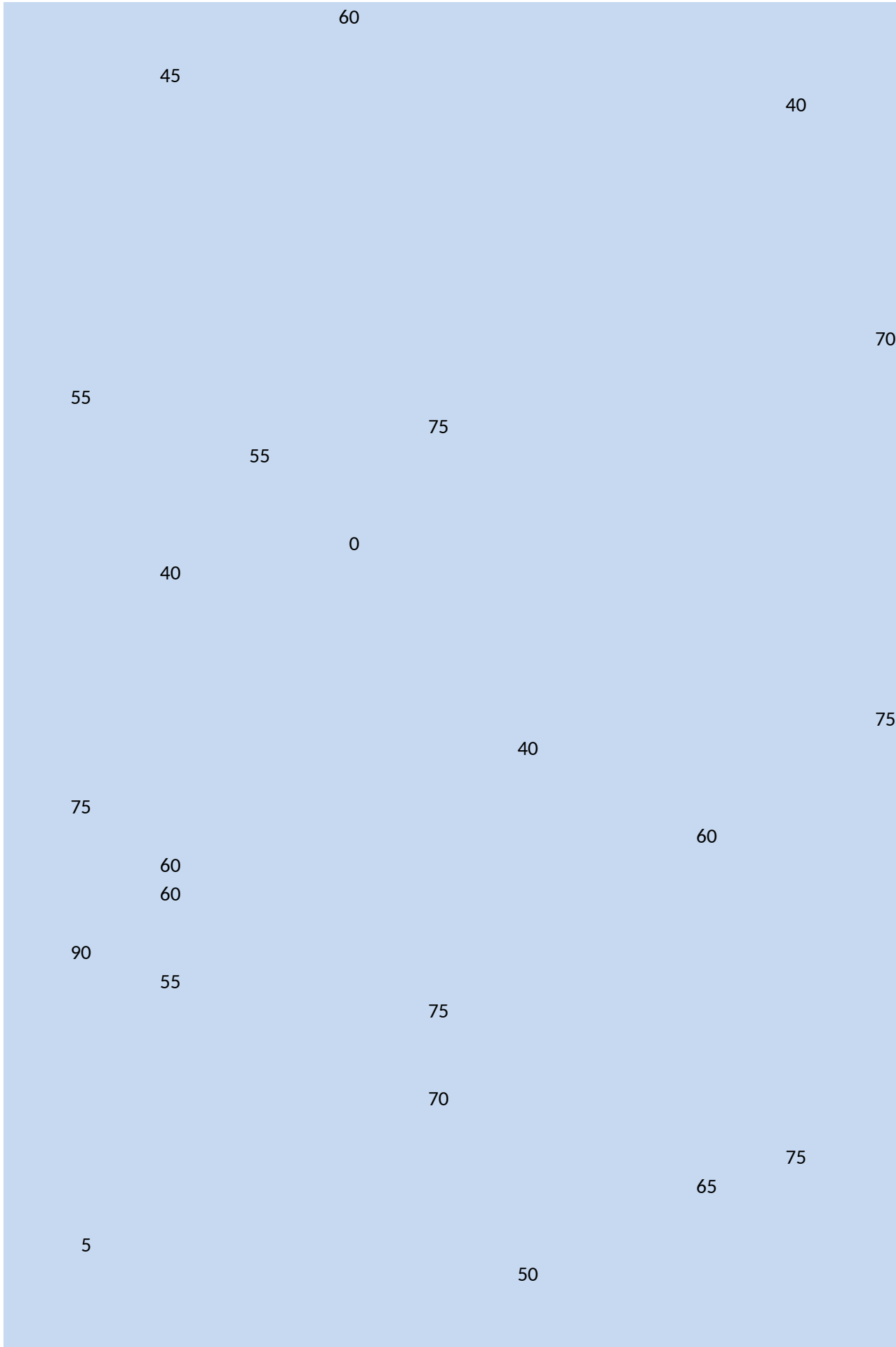
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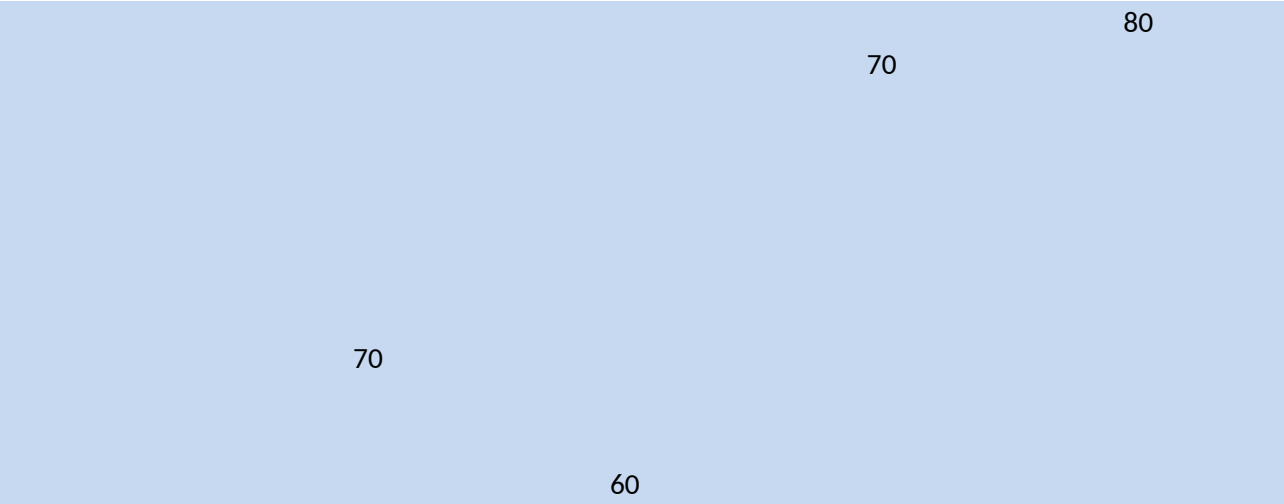
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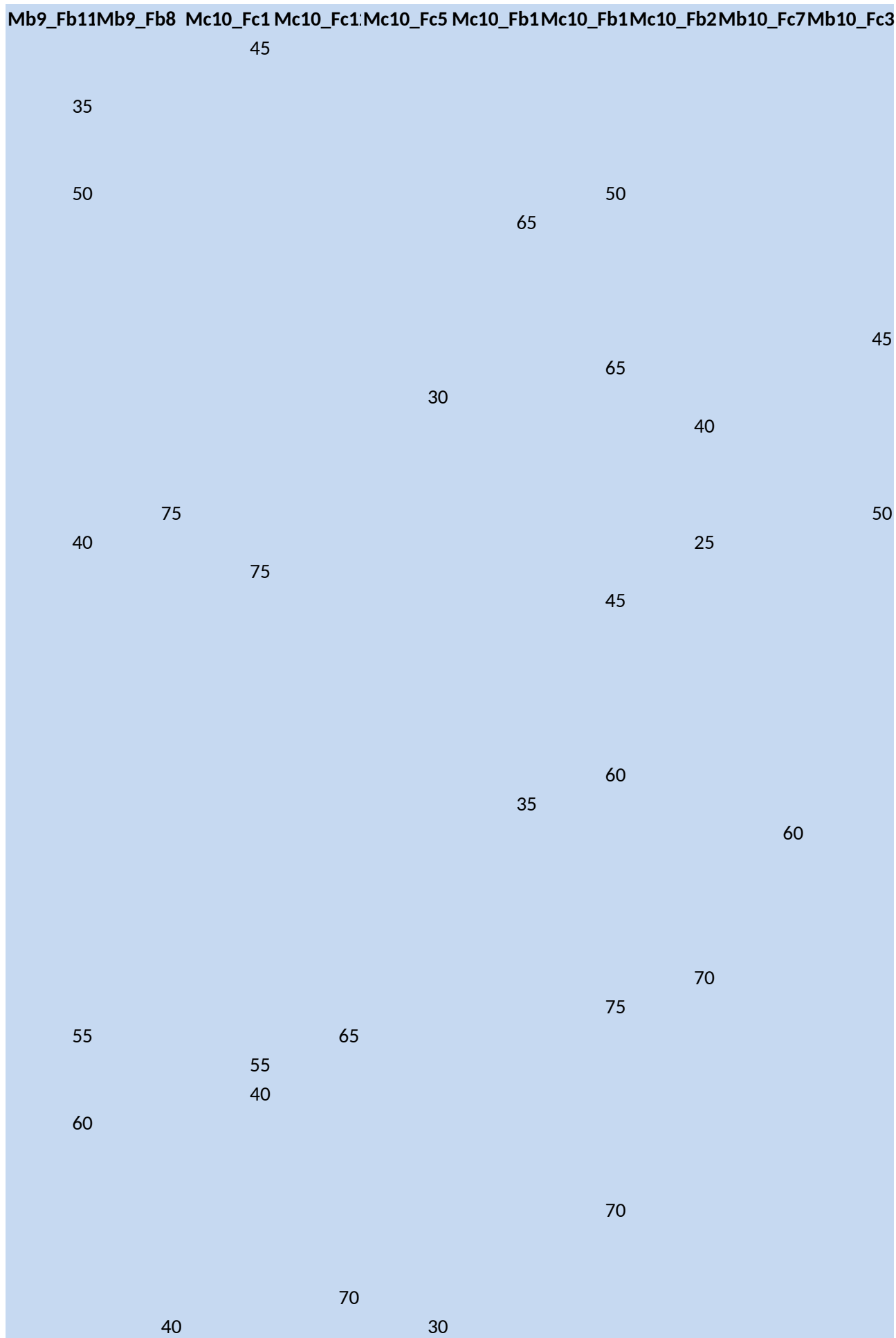
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50 55 50.83333 53.125 63.33333 59.23077 55.83333 51.66667 55 56.92308





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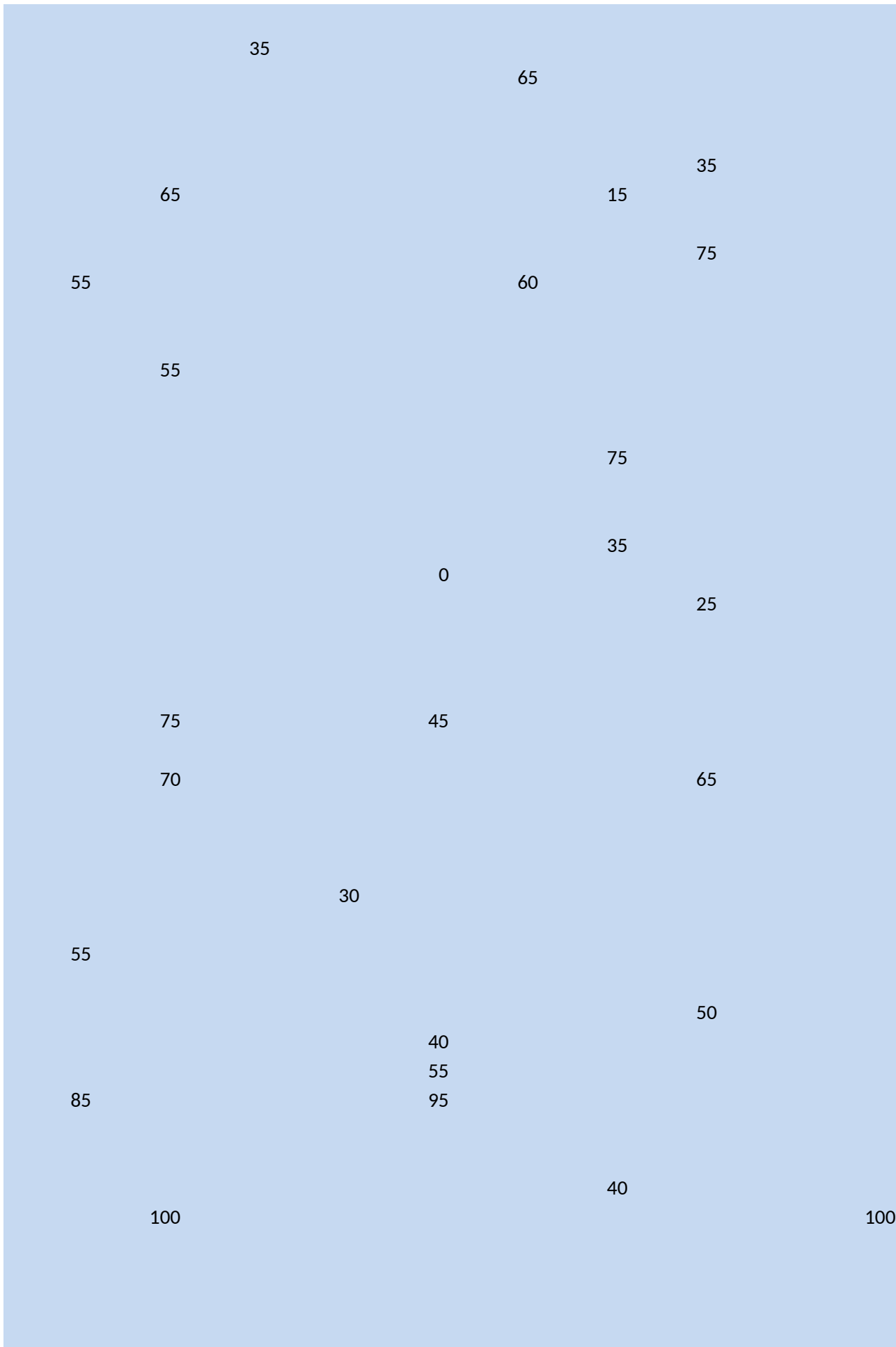
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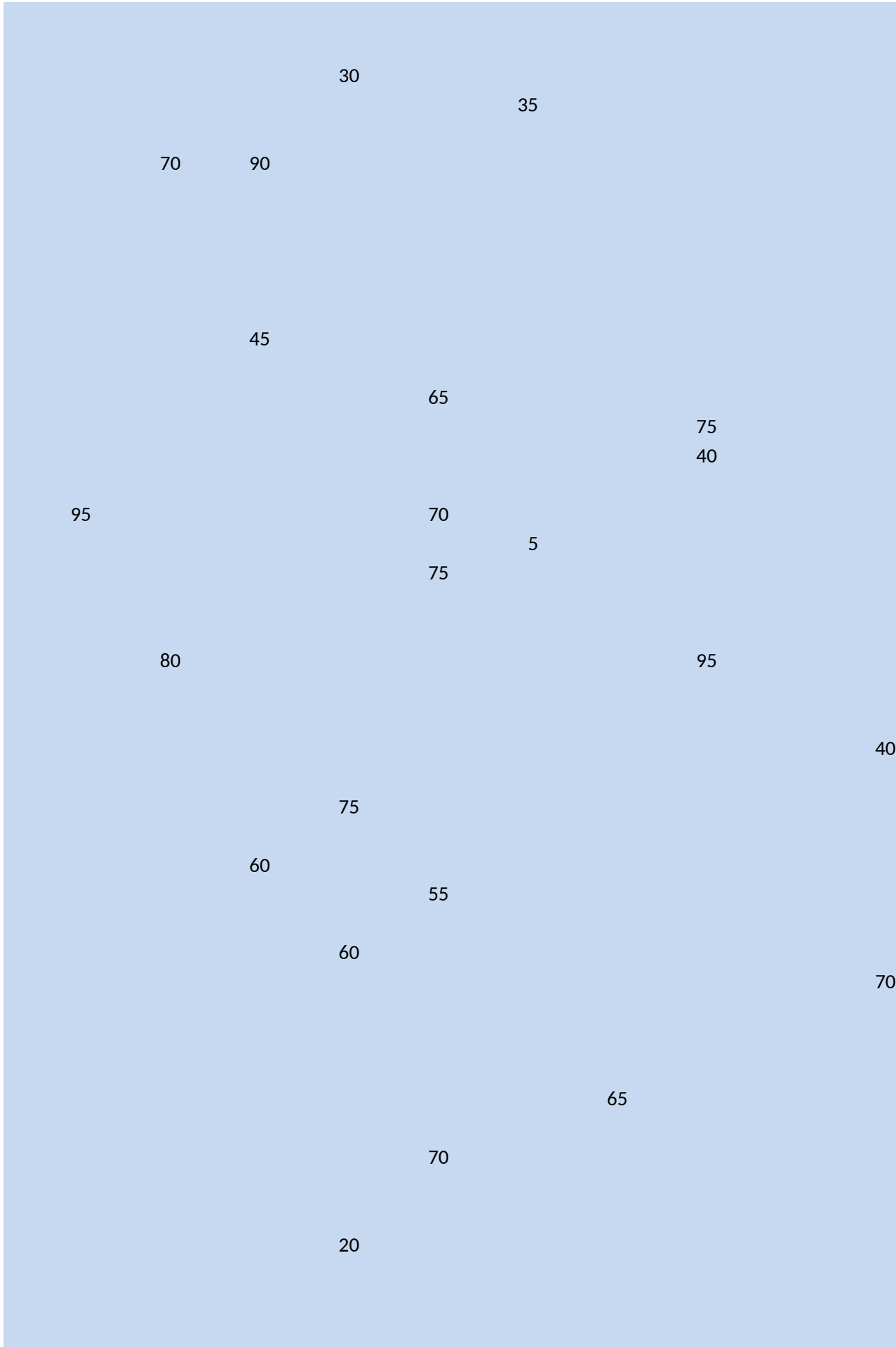
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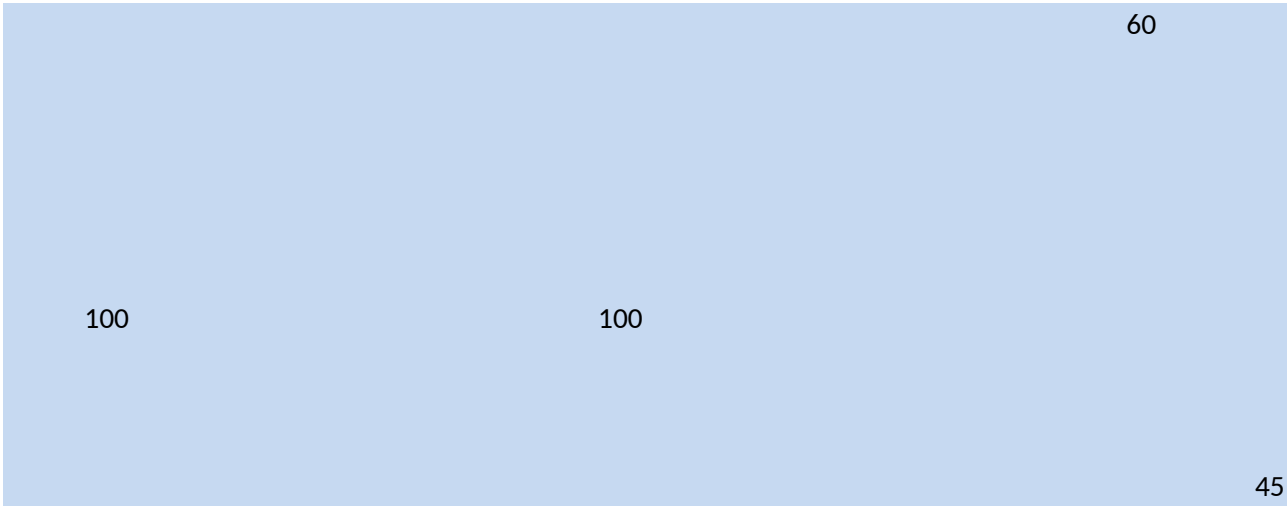
85

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63.57143 70.45455 54.16667 52 52.35294 51.25 56.66667 57.85714 62 52.77778



Mb10_Fc4Mb10_Fb8Mb10_Fb9Mb10_Fb6Mc11_Fc3 Mc11_Fc9 Mc11_Fc2 Mc11_Fb6Mc11_Fb1Mc11_Fb1

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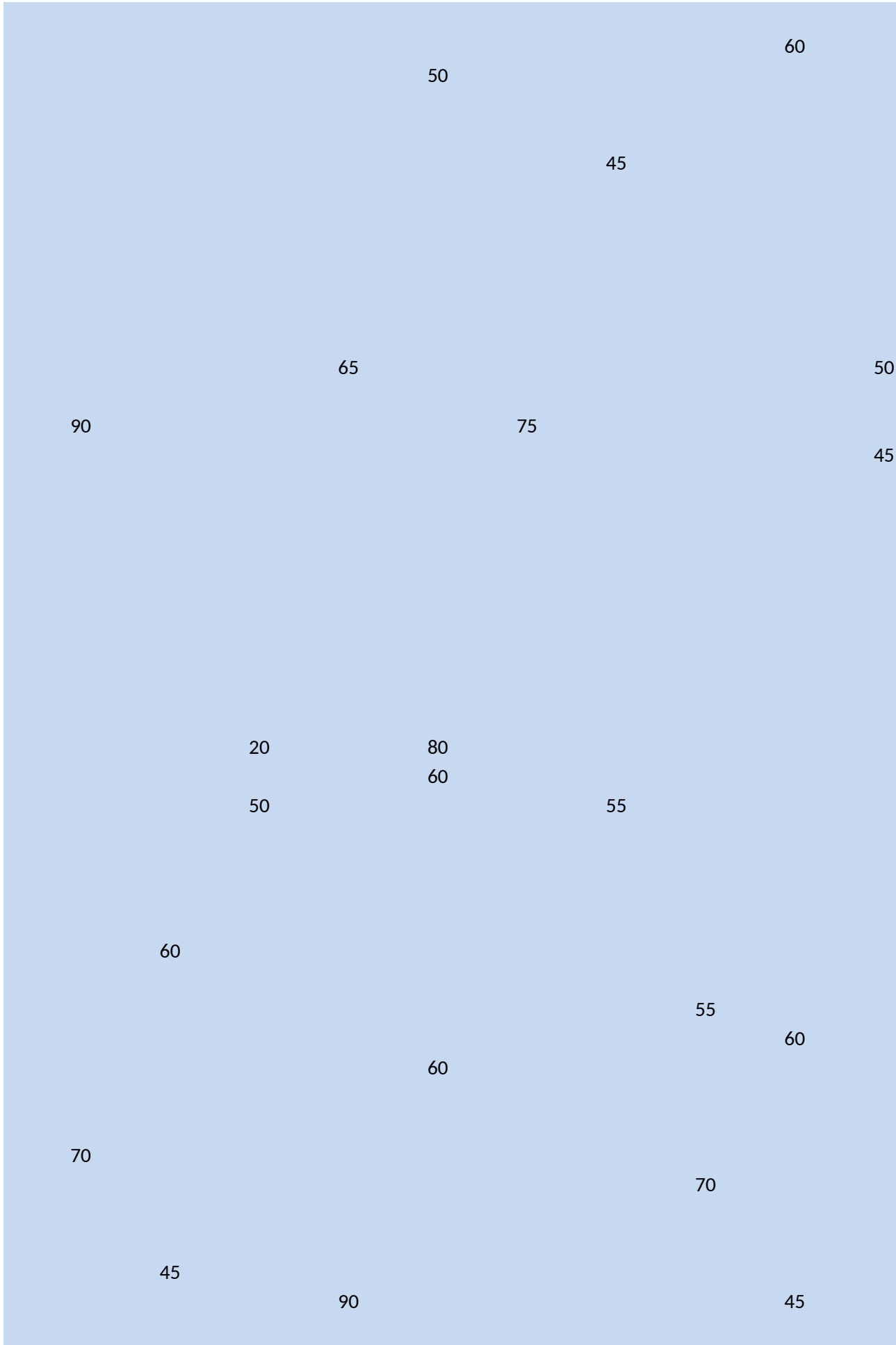
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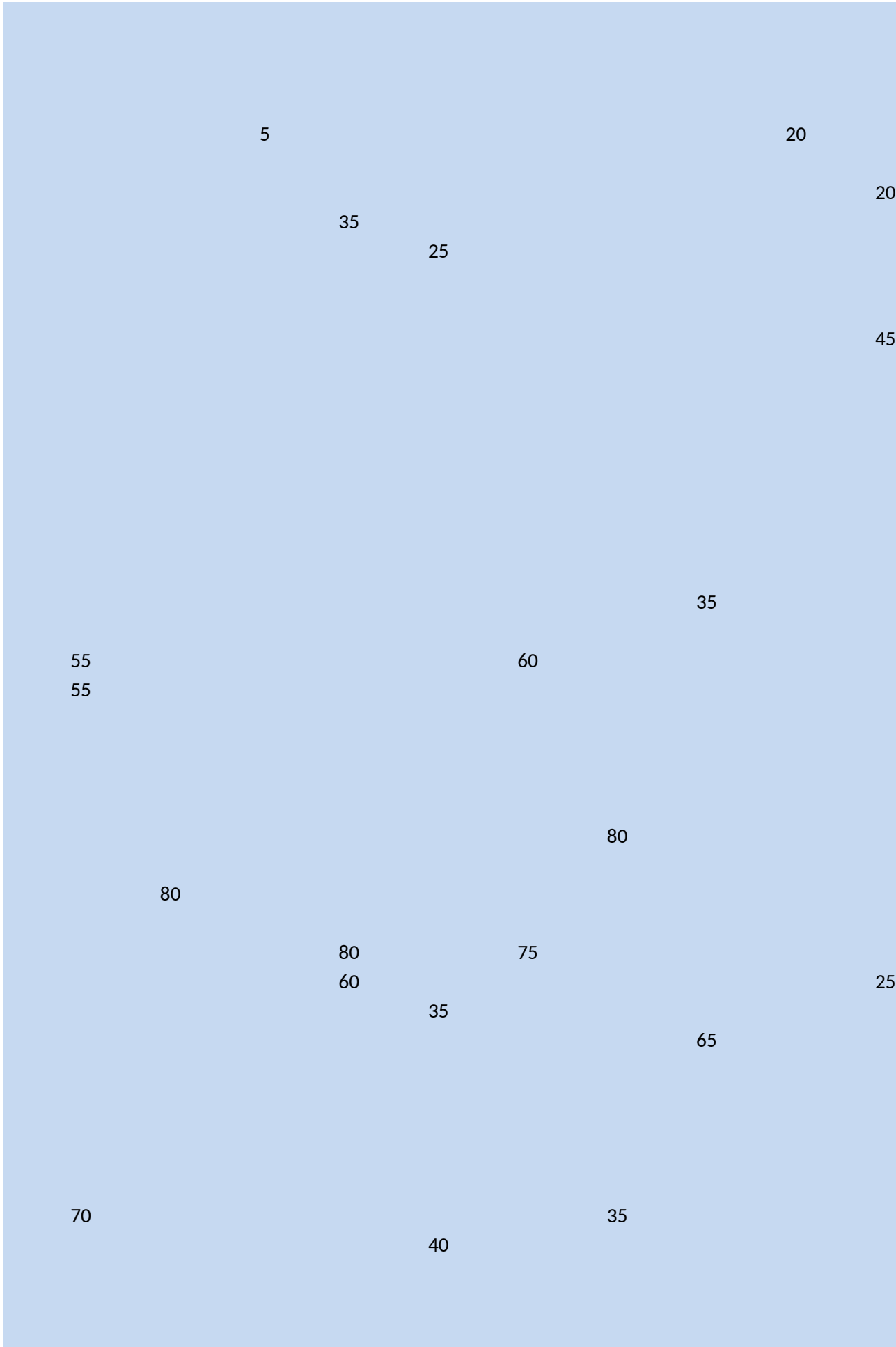
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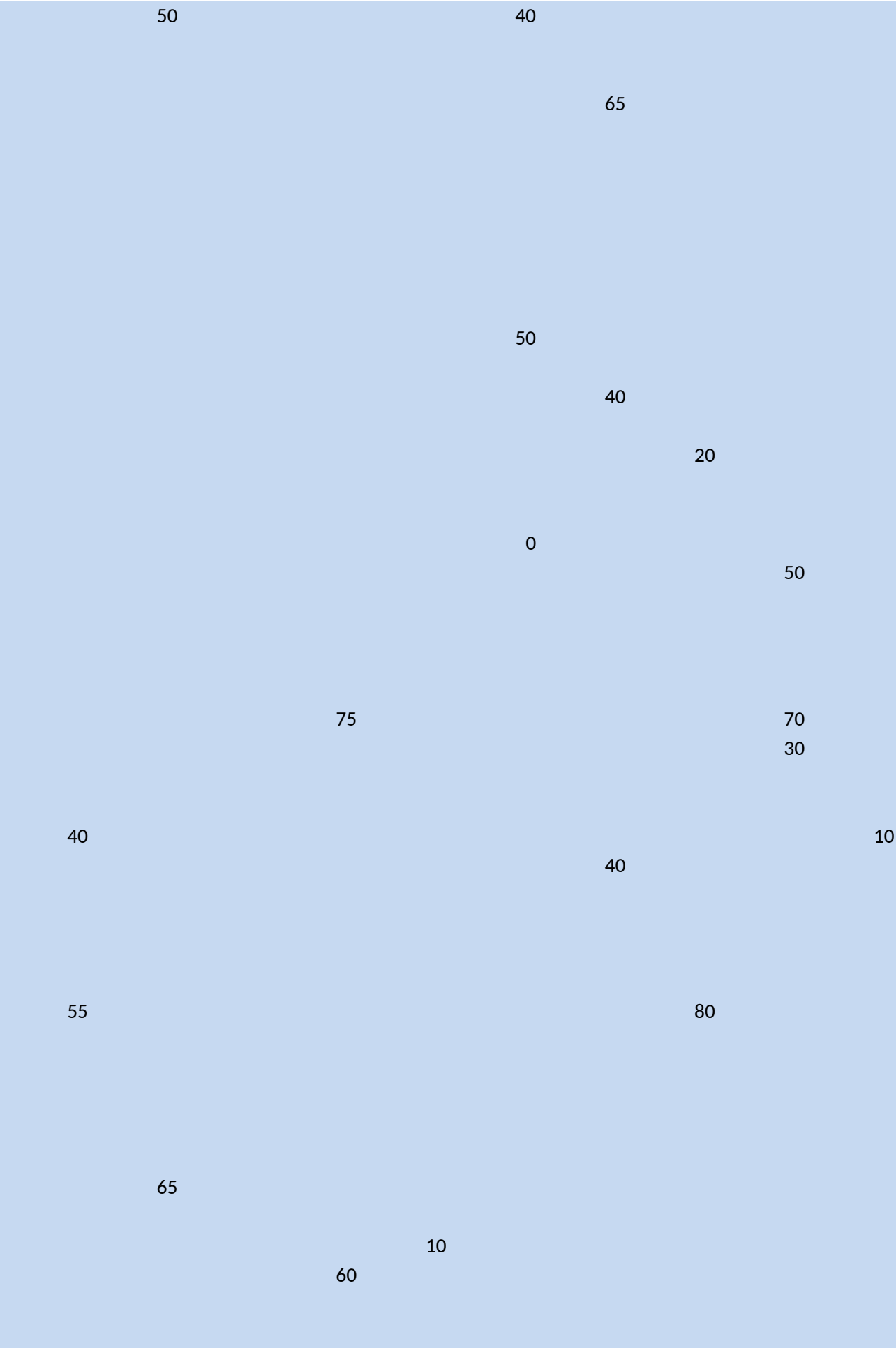
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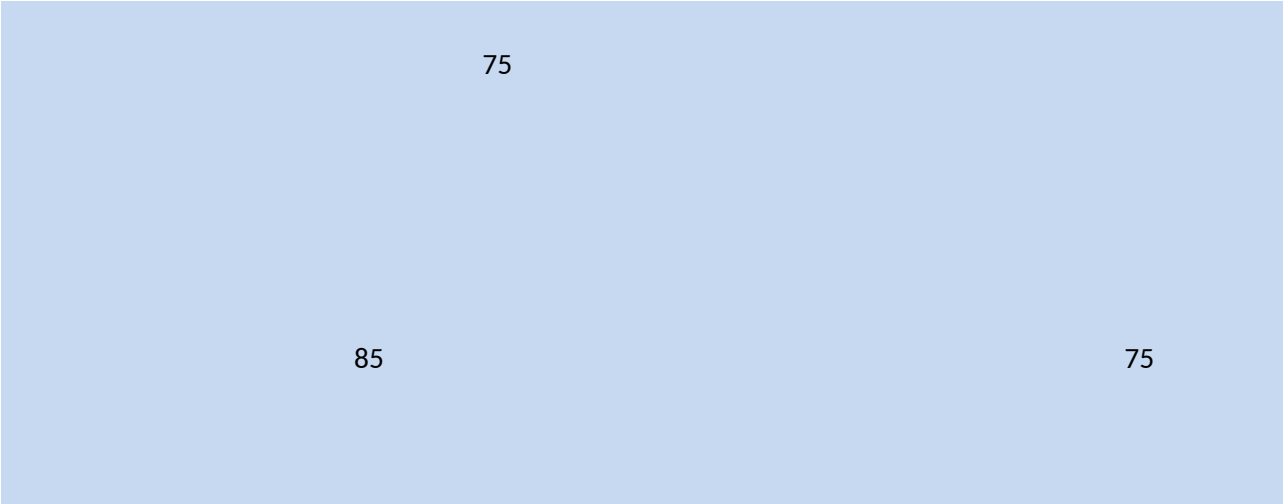
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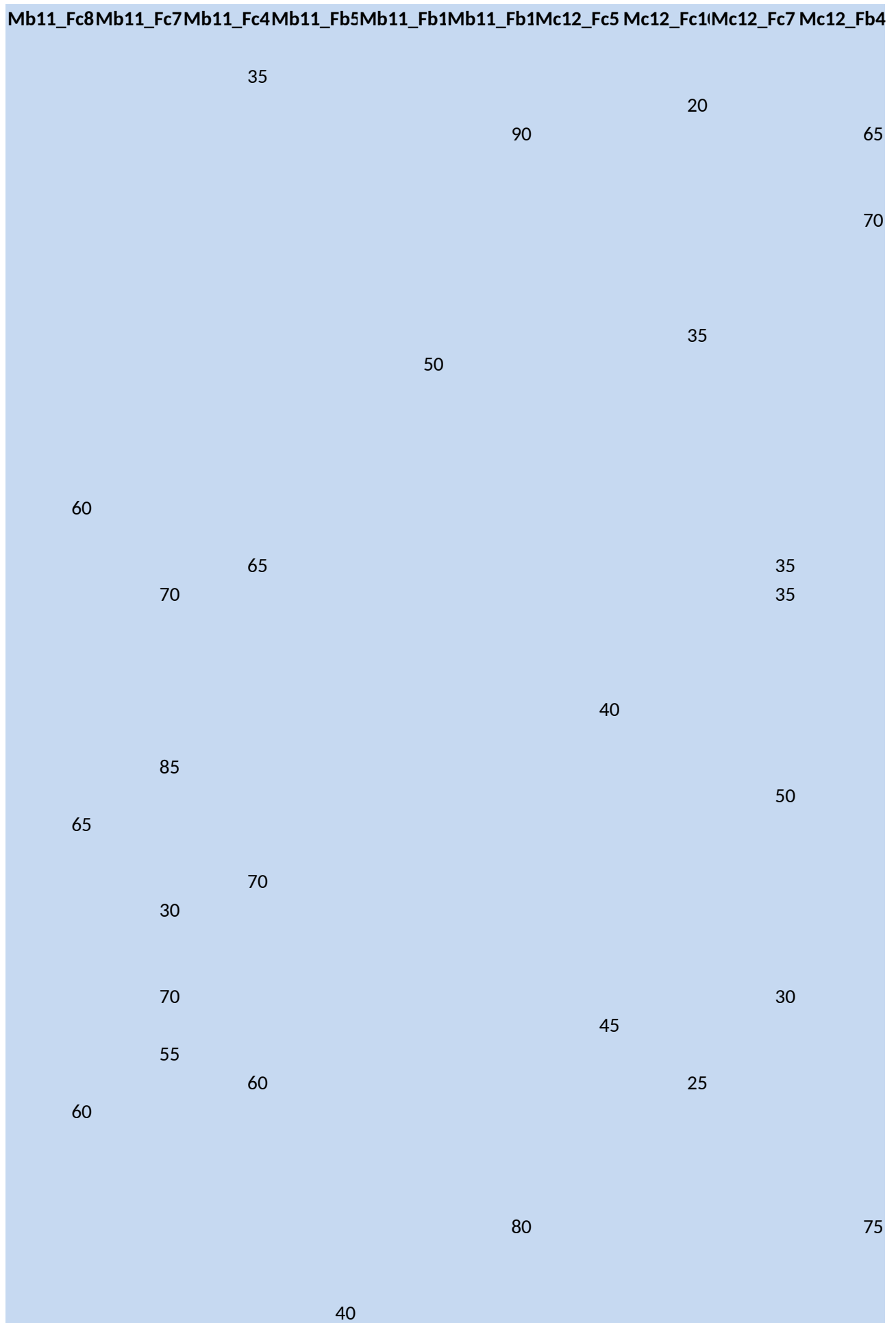






58 55 56.11111 58.18182 49.28571 42.5 51 47.5 47.30769 41.25





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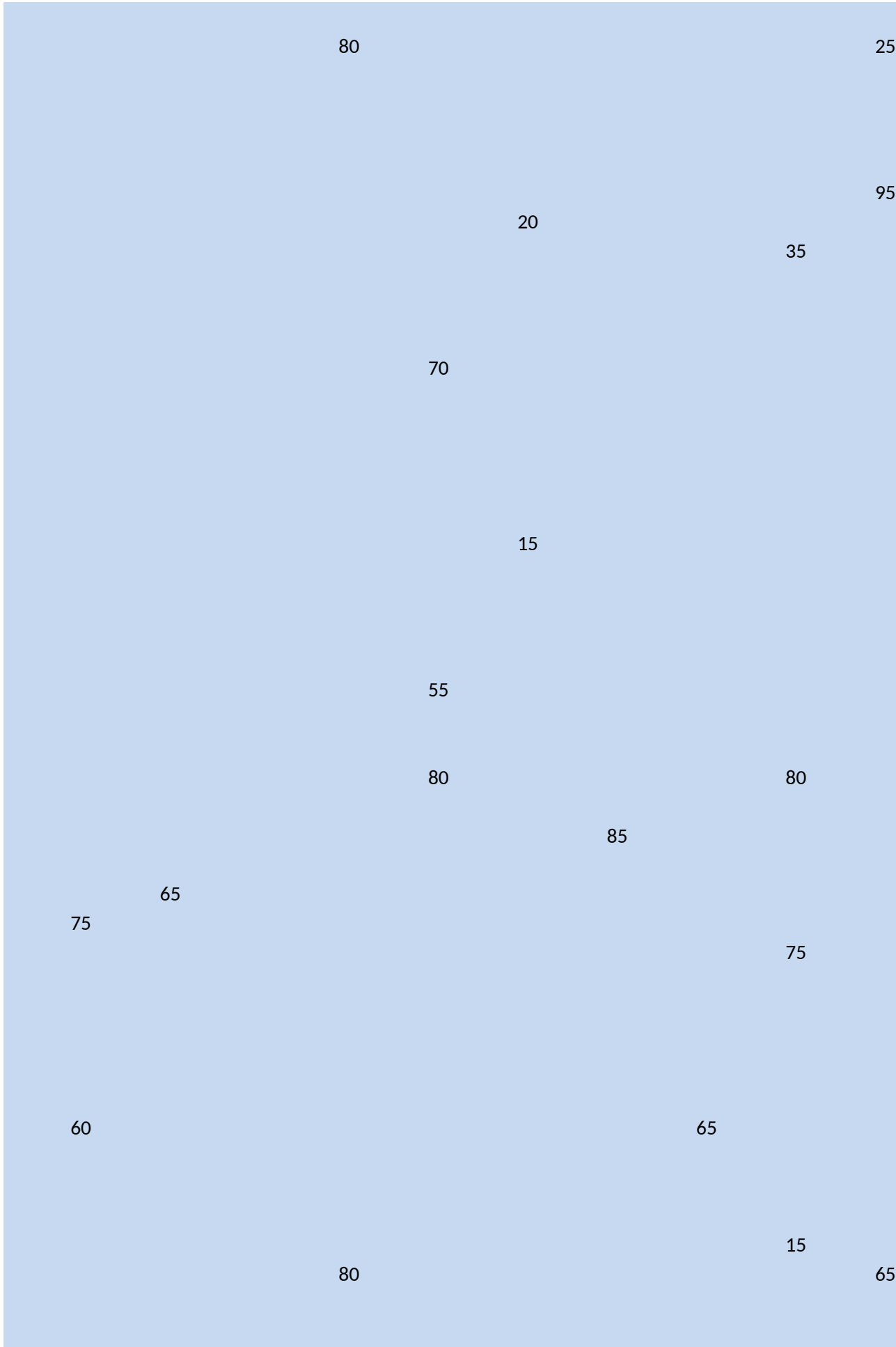
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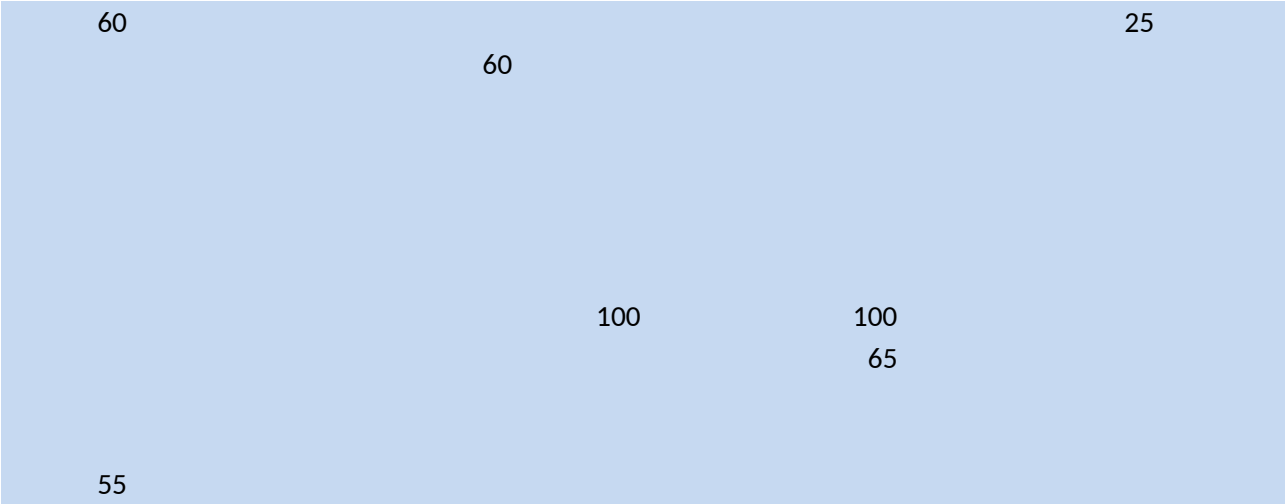
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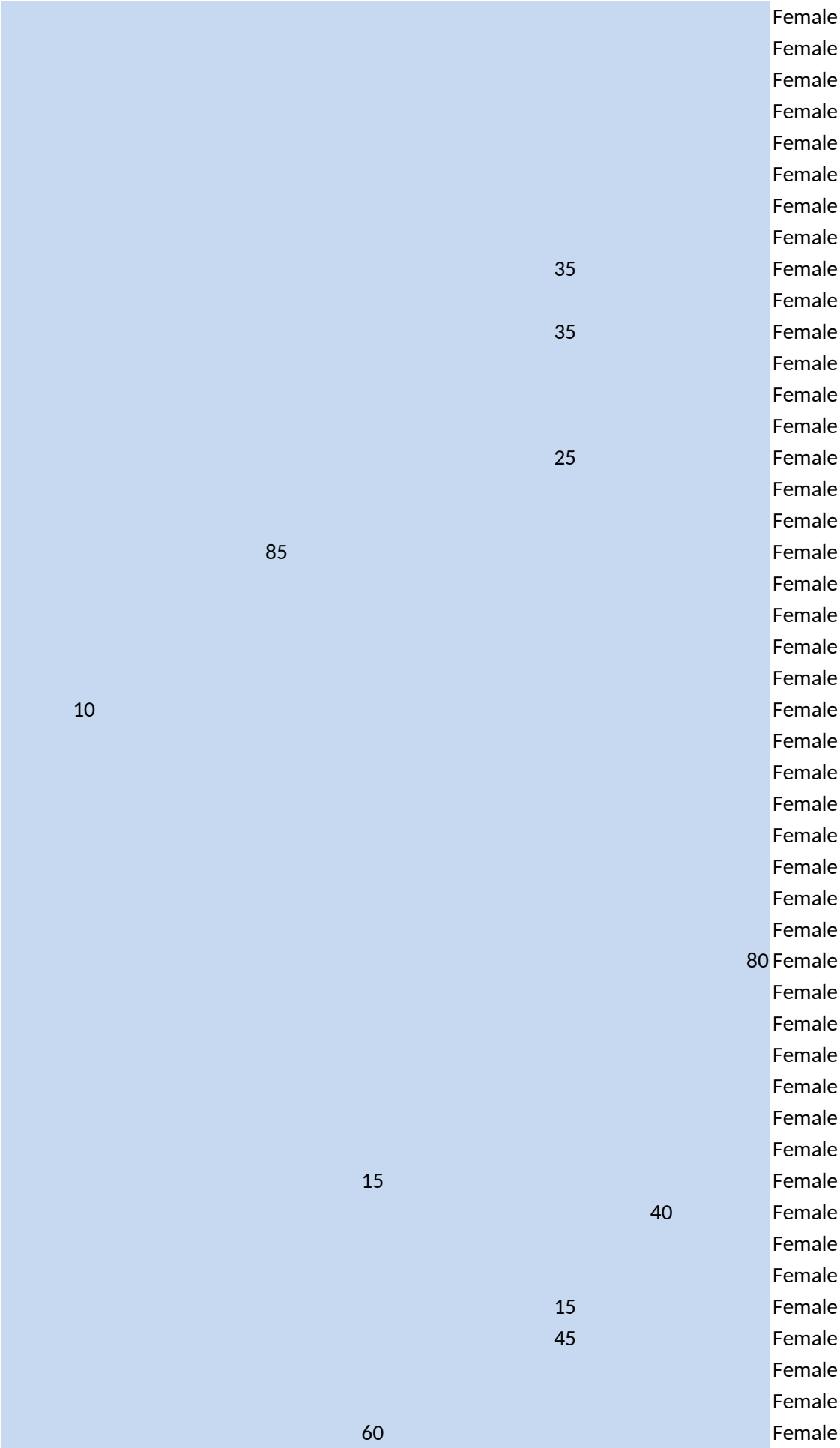
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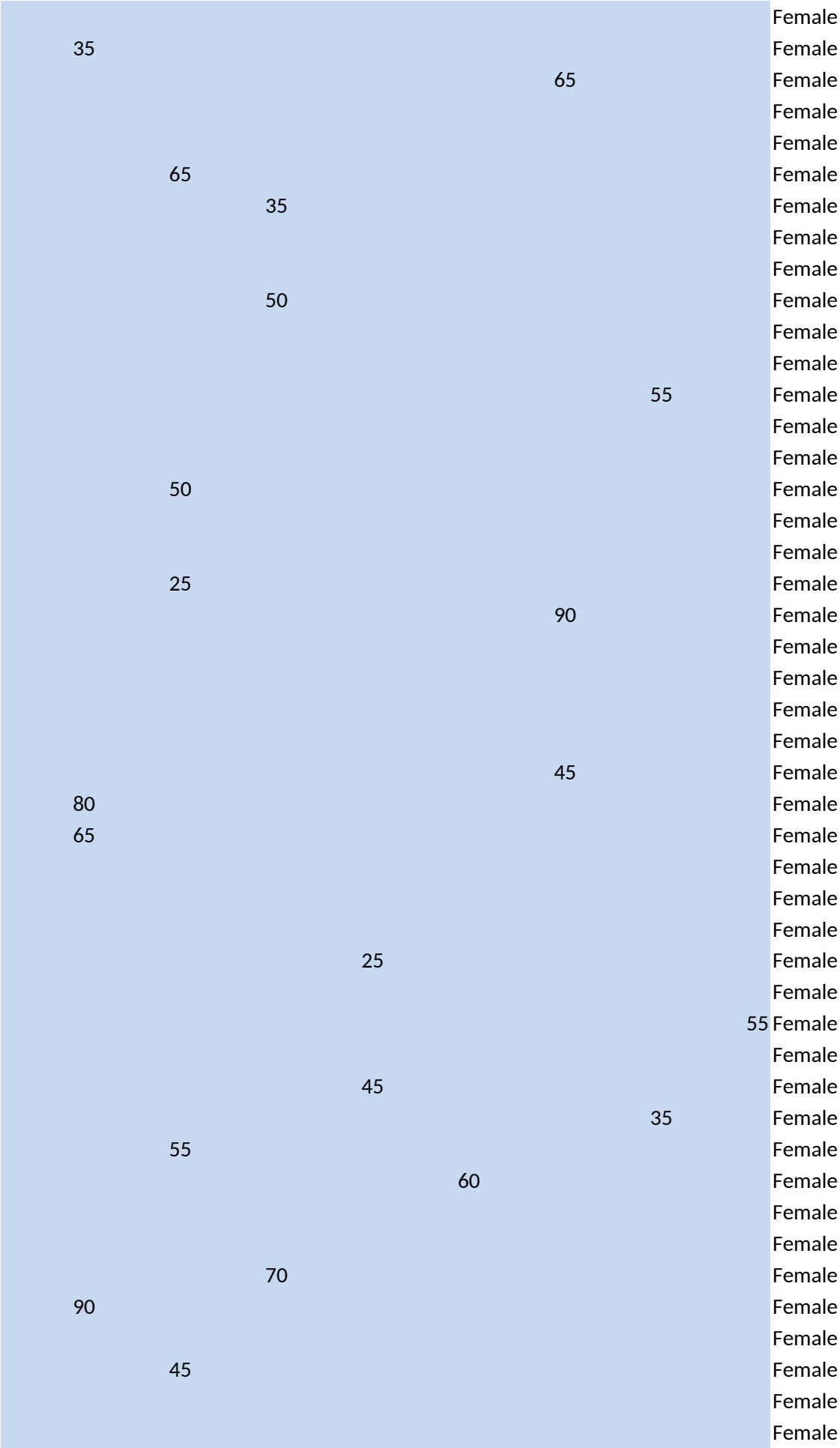


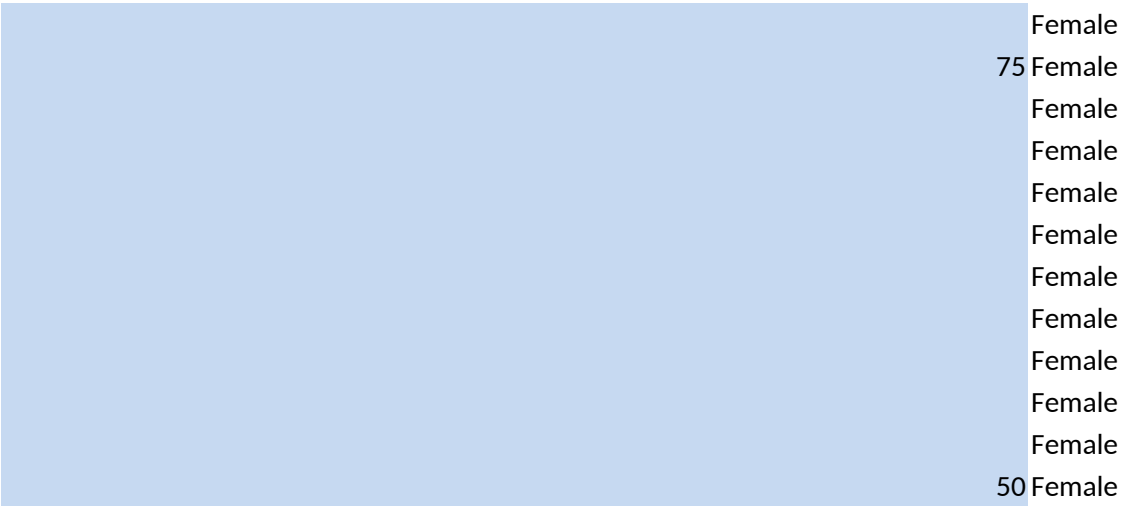
62.5 68.07692 56.42857 60.45455 66.25 61.5 53.63636 41.875 46.25 54.375



Mc12_Fb6	Mc12_Fb3	Mb12_Fc1	Mb12_Fc1	Mb12_Fc2	Mb12_Fb8	Mb12_Fb9	Mb12_Fb1	Participant Sex
						80		Female
							10	Female
								Female
								Female
								Female
							75	Female
								Female
								Female
								Female
								Female
					55			Female
40								Female
						30		Female
								Female
								Female
	40							Female
		45						Female
								Female
		55						Female
								Female
								Female
								Female
			65					Female
								Female
		60						Female
								Female
						55		Female
	50							Female
								Female
						65		Female
								Female
								Female
			55					Female
								Female
		45						Female
								Female
								Female
				60				Female
								Female
					60			Female
						60		Female
								Female
			15					Female







53 46.875 55 43.33333 48.75 50 53 65.625

		Male w other
Average		55.59245
SD		21.71343

#	participant	Fc1	Fc2	Fc3	Fc4	Fc5	Fc6	Fc7	Fc8	
1	675454		75 n/a		90	90	75 n/a		75 n/a	
4	676921	n/a		85 n/a		85	65	65	70 n/a	
9	676947	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
15	676960	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
22	676985	n/a	n/a		85 n/a		75	30 n/a		40
25	677004	n/a		70 n/a	n/a	n/a	n/a	n/a	n/a	
26	677005		85 n/a	n/a		80 n/a	n/a	n/a		45
45	677215		75 n/a		75 n/a	n/a	n/a	n/a	n/a	
46	677216		80 n/a	n/a		85	65	60 n/a	n/a	
49	677230	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
51	677627	n/a		40 n/a	n/a	n/a		55 n/a		65
54	678911	n/a		95 n/a	n/a	n/a		100 n/a		50
55	679369		60	55	60	60 n/a		55 n/a	n/a	
59	680133	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
66	680894	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
68	680912	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
70	680946	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
74	681018		90 n/a		85 n/a		70 n/a		70 n/a	
76	681231	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
84	686894	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
91	689001	n/a		70	70	65	75	60	50 n/a	
94	689646	n/a		60	75	70	70 n/a	n/a	n/a	
97	689655	n/a	n/a		70	75 n/a	n/a	n/a	n/a	
98	689657	n/a	n/a		85 n/a		60 n/a		20	45
102	689712		85 n/a	n/a	n/a		70	35 n/a		65
103	689716	n/a		80	50 n/a	n/a	n/a	n/a	n/a	
104	689721	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
108	689833	n/a	n/a	n/a		75	55	50	60	45
109	689894		25 n/a	n/a	n/a		10	0	50	50
111	689939	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
113	690008		85 n/a	n/a		85 n/a		80 n/a	n/a	
116	690019	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
117	690028	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
118	690031	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
121	690069	n/a		70	60	75	80	55 n/a	n/a	
125	690120	n/a		85	80	80	65	80	65	75
135	690216	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
139	690236	n/a	n/a		75	85 n/a		35	35 n/a	
142	690241	n/a	n/a		55	45	50 n/a		40 n/a	
143	690246	n/a		70	85	85	75	50 n/a		70
151	690368	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
152	690370	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
156	690378		85 n/a	n/a		85	85 n/a	n/a	n/a	
158	690386	n/a	n/a		70	70 n/a	n/a		30	60
168	690427	n/a		60 n/a	n/a		55 n/a		55	40

170	690431	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
173	690450	n/a		65	n/a		75	n/a	70
176	690455	n/a		35	n/a		60	40	35
186	691288		90	n/a		95	60	80	n/a
187	691343	n/a		n/a		85	n/a	70	65
191	691524		75		75	n/a	n/a	n/a	n/a
193	691534	n/a		n/a		n/a	n/a	n/a	n/a
194	691542		80		65		75	n/a	60
199	696567	n/a		n/a		n/a	n/a	n/a	n/a
204	702137	n/a		n/a		n/a	n/a	n/a	n/a
206	704974	n/a		n/a		n/a	n/a	n/a	n/a
208	704979		65		30	n/a		10	30
212	705374	n/a		n/a		n/a	n/a	n/a	n/a
215	705993	n/a		85		75	90	75	n/a
217	712228	n/a		n/a		n/a	n/a	n/a	n/a
220	712231	n/a		n/a		n/a	n/a	n/a	n/a
221	712232	n/a		n/a		n/a	n/a	n/a	n/a
224	712235		85		85		90	n/a	n/a
225	712236	n/a		n/a		n/a	n/a	n/a	n/a
227	712238		90		95	n/a		85	n/a
228	712240		90	n/a		90	n/a	80	n/a
230	712242	n/a		80		80	n/a	n/a	65
234	712246	n/a		n/a		95	n/a	n/a	50
238	712254	n/a		n/a		n/a	n/a	n/a	n/a
247	712332	n/a		n/a		n/a	n/a	n/a	n/a
250	719264		90		100	n/a	n/a	90	n/a
252	719266	n/a		n/a		n/a	n/a	n/a	n/a
254	719268	n/a		n/a		n/a	n/a	n/a	n/a
255	719269	n/a		n/a		n/a	n/a	n/a	n/a
258	719273	n/a		n/a		n/a	n/a	n/a	n/a
266	719282	n/a		n/a		n/a	n/a	n/a	n/a
267	719283	n/a		n/a		65	95	n/a	65
269	719285	n/a		n/a		n/a	n/a	n/a	80
271	719287	n/a		n/a			80	50	n/a
276	719293		85	n/a		90	n/a	75	n/a
292	719310	n/a		90	n/a		n/a	55	85
293	719311	n/a		n/a		n/a	n/a	n/a	n/a
295	719313	n/a		80		85	80	90	90
301	719320	n/a		n/a		n/a	n/a	n/a	n/a
305	719325		100	n/a		n/a	85	95	85
306	719326		100	n/a		n/a	100	n/a	100
307	719328	n/a		n/a		n/a	n/a	n/a	n/a
308	719329	n/a		n/a		n/a	n/a	n/a	n/a
314	719335	n/a		n/a		n/a	n/a	n/a	n/a
316	719337		85		80	n/a	n/a	75	60
323	719344	n/a		n/a		n/a	n/a	n/a	90

324	719345	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
326	719347	n/a	n/a	n/a	45 n/a		15	30 n/a	
334	719357		80 n/a		80	75 n/a	n/a	40	45
337	719361		90 n/a	n/a		90	90	90 n/a	90
338	719362		95	95	95 n/a	n/a	n/a	95 n/a	
341	719365	n/a		75	70 n/a		60 n/a	n/a	75
342	719366	n/a		75	55 n/a	n/a	n/a	n/a	70
344	719368		75 n/a		70	75 n/a		50 n/a	n/a
346	719370	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
350	719374	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
351	719375	n/a	n/a	n/a	n/a		70	65	55 n/a
354	719378		75	65 n/a		75 n/a	n/a	n/a	n/a
356	719380	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
358	719382	n/a	n/a		80 n/a	n/a	n/a		80 n/a
359	719383		90 n/a		85	95 n/a	n/a	n/a	65
360	719384	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
365	719390		80 n/a		90	75 n/a	n/a	n/a	75
367	719392	n/a		55 n/a		95	60 n/a		90
371	719397	n/a	n/a		70 n/a		65 n/a		60 n/a
373	719399	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
375	719401	n/a		80 n/a		90	70	70	80
379	719405	n/a		65 n/a	n/a		95	85	65
380	719406	n/a	n/a		70 n/a		40	70 n/a	
381	719408	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
384	719411	n/a	n/a		65	55 n/a	n/a		20
386	719413	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
389	719416	n/a		95	100 n/a		80 n/a		90
392	719419	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
402	719429	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
418	719447	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
422	719451		90 n/a	n/a		85 n/a		75	80
428	719457	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
429	719458		75 n/a		100 n/a		60 n/a		100
434	719464	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
441	719472	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
445	719477	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
449	719481	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
450	719482	n/a	n/a		80	70	75	60	70 n/a
461	719493		90	80 n/a		100 n/a	n/a	n/a	
462	719494		80	75	90	90	70 n/a	n/a	n/a
463	719495	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
467	719500	n/a	n/a	n/a		80	75 n/a		85 n/a
470	719503	n/a	n/a		80 n/a	n/a		50	60
474	719507	n/a	n/a		55 n/a		75 n/a		70
479	719512		100	100	95	75	70	80 n/a	
483	719517	n/a	n/a		80 n/a	n/a		30 n/a	n/a

486	719520	n/a	95	80	n/a	85	90	n/a	90
487	719521	n/a	80	90	95	n/a	n/a	100	95
488	719523	75	n/a	65	70	55	65	n/a	n/a
489	719524	n/a	n/a	n/a	n/a	n/a	55	n/a	
496	719533	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
498	719535	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
499	719537	65	80	n/a	n/a	60	n/a	n/a	65
500	719538	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
501	719539	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
502	719540	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
515	719553	n/a	n/a	85	80	n/a	70	95	n/a
516	719554	80	n/a	80	65	45	n/a	n/a	60
533	719574	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
539	719583	n/a	n/a	65	n/a	70	55	n/a	n/a
543	719587	90	n/a	n/a	90	n/a	n/a	70	80
544	719588	n/a	80	95	95	75	n/a	70	n/a
547	719591	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
557	719602	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
560	719605	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
570	719617	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
571	719618	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
574	719622	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
583	719632	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
584	719633	n/a	n/a	n/a	75	65	65	n/a	60
588	719637	95	n/a	90	75	90	55	n/a	n/a
589	719638	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
602	719652	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
606	719656	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
607	719657	n/a	n/a	n/a	100	n/a	n/a	n/a	5
609	719659	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
611	719661	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
626	719679	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
627	719680	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
632	719686	n/a	n/a	90	n/a	n/a	n/a	n/a	70
633	719687	70	n/a	80	n/a	55	n/a	55	n/a
635	719689	n/a	n/a	n/a	n/a	90	70	45	95
636	719690	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
637	719691	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
638	719692	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
640	719694	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
641	719695	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
647	719701	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
652	719708	n/a	n/a	90	n/a	n/a	n/a	n/a	
656	719712	55	n/a	40	85	n/a	n/a	n/a	75
665	719722	95	80	85	65	60	n/a	60	90
666	719723	85	80	n/a	90	n/a	70	n/a	85

667	719725	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
668	719726	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
670	719728	n/a	n/a		90	95 n/a	n/a		90 n/a	
671	719730		85	65	90 n/a		75 n/a		90 n/a	
673	719732	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
674	719733		90 n/a	n/a	n/a	n/a		85	95	85
675	719734	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
686	719746	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
687	719747		60 n/a	n/a		75 n/a		65	85 n/a	
688	719748		100 n/a		80 n/a	n/a		80 n/a	n/a	
689	719749		90	80 n/a	n/a	n/a	n/a	n/a		75
692	719752	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
693	719753	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
694	719754	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
696	719756	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
698	719759	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
699	719760		50	60 n/a	n/a	n/a		55	70 n/a	
701	719762	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
707	719770	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
709	719772		55	70	80 n/a		70	40	75 n/a	
711	719775	n/a	n/a		100 n/a		70	30 n/a		85
714	719778	n/a		85	60	85	65 n/a	n/a		80
720	719785	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
722	719787		80	80 n/a	n/a		70	55 n/a		70
723	719788		90 n/a		95	85	35 n/a	n/a		65
731	719796		100	100	100	100	100 n/a		100	100
733	719798	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
736	719801	n/a		75	55	70	60 n/a		90 n/a	
738	719803	n/a	n/a		100 n/a		85 n/a		90 n/a	
740	719805	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
743	719808	n/a		90	90 n/a		85 n/a		35 n/a	
745	719810		75 n/a		75 n/a		70 n/a		75 n/a	
746	719812		75	60	70 n/a	n/a		65	45 n/a	
748	719814	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
750	719816	n/a		75 n/a	n/a		80	65	80	70
760	719828	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
767	719839	n/a	n/a	n/a		55 n/a	n/a		55 n/a	
770	719845	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
771	719846		85	95 n/a		95 n/a	n/a	n/a	n/a	
775	719853	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
779	719862		90	85 n/a		95	65 n/a		60	75
781	719865		70	70 n/a		65	70 n/a		65	65
786	719873		90	0	80	80	75 n/a		90	75
791	719879	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
798	719886	n/a		75	90	80	90 n/a	n/a		75
800	719888	n/a	n/a	n/a	n/a		55	55	55 n/a	

803	719891	n/a	n/a	n/a	95	85	80	70 n/a	
804	719892	n/a	n/a	n/a	n/a		40	40	55
806	719894	n/a	n/a	n/a	65	50 n/a	n/a		70
808	719897	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
810	719899	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
814	719903	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
816	719905	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
818	719907	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
824	719913	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
825	719914	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
828	719918	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
830	719920	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
833	719924	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
834	719925		75 n/a	n/a	n/a	80	40 n/a		85
837	719928	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
839	719930	n/a		60 n/a	n/a	75 n/a		70	80
847	719938	n/a		90 n/a	n/a	n/a		90	95
855	719947	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
856	719948	n/a	n/a		85	80 n/a	n/a	n/a	
858	719950	n/a		85	90 n/a	70 n/a		65 n/a	
859	719951	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
861	719953		70 n/a	n/a	n/a	75 n/a	n/a		85
868	719962	n/a		100 n/a	95 n/a	n/a		95	80
871	719967	n/a	n/a	n/a		85	65	90 n/a	
873	719969		80	80 n/a	80 n/a	n/a	n/a		85
875	719971	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
878	719974	n/a		70	80 n/a	n/a	75 n/a	n/a	
880	719976	n/a		65 n/a	60	65 n/a		55	85
883	719979	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
889	719985	n/a		60 n/a	75	65 n/a		25 n/a	
890	719986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
891	719987		70	65 n/a	n/a	n/a		55	80
892	719988		90	65	55 n/a	65 n/a	n/a		65
897	719996	n/a		80	100 n/a	n/a	n/a	n/a	70
902	720001	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
903	720002		65 n/a		70 n/a	n/a	60 n/a	n/a	
907	720006	n/a	n/a	n/a	75 n/a	n/a		55	70
910	720010	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
913	720013	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
914	720014		25	25	15 n/a	n/a	n/a	10 n/a	
922	720034	n/a	n/a		80 n/a	70 n/a		85	90
923	720035	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
927	720040	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
932	720048		70	70	55 n/a	n/a	15 n/a		40
938	720055		85	65	55	75 n/a	85 n/a		80
942	720061	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

944	720064	n/a		70	75	60 n/a		45 n/a	n/a
946	720068	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
957	720080		60	70 n/a		75	75 n/a		70 n/a
962	720086		65	70 n/a	n/a		70	65	60 70
968	720097	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
969	720098	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
975	720105	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
977	720109		50 n/a	n/a	n/a		45 n/a		45 n/a
979	720113	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
980	720115	n/a	n/a		60	75 n/a	n/a	n/a	70
981	720117	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
984	720123	n/a	n/a		90	80 n/a		70 n/a	85
987	720133	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
990	720139		75	75 n/a		80 n/a	n/a	n/a	n/a
993	720144	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
999	720153	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1002	720156		90	95	95 n/a		90	90	85 95
1003	720157	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1005	720160	n/a		70	80	55	70 n/a		65 25
1006	720161	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1013	720170	n/a	n/a	n/a		65 n/a		65	70 n/a
1019	720186	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1020	720187	n/a		70 n/a	n/a	n/a		35 n/a	60
1021	720188	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1025	720194	n/a	n/a	n/a	n/a		80	80 n/a	80
1027	720198	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1030	720204		85 n/a		90	80	95 n/a		90 90
1031	720209	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Means 79.05405 73.73418 78.51648 78.13253 69.83871 61.28571 66.55172 71.79775

Overall Means
SDs

Fc9	Fc10	Fc11	Fc12	Fb1	Fb2	Fb3	Fb4	Fb5	Fb6	
n/a		80	85 n/a	n/a		70 n/a	n/a	n/a		60
	65	70 n/a	n/a		80 n/a		80 n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	50 n/a		80	80	35	70 n/a		75 n/a	n/a	
	70 n/a	n/a	n/a		75 n/a		70	35	85	20
n/a		70 n/a		85 n/a		65	75 n/a		65	50
	75	65	55	65 n/a		75 n/a		70	60	60
	70	75	60 n/a	n/a		65	80 n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a		45 n/a		20 n/a		65	50	55 n/a	
n/a		70	70 n/a		60 n/a		95	65	35 n/a	
n/a		60	60	60 n/a	n/a	n/a	n/a		60 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	75 n/a	n/a		85 n/a		90 n/a		80 n/a		60
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	60 n/a	n/a	n/a		55 n/a	n/a	n/a	n/a	n/a	
n/a		65 n/a	n/a		80 n/a	n/a	n/a	n/a		45
	80	65 n/a	n/a		60	70 n/a	n/a		60	45
	90 n/a	n/a	n/a		10	55 n/a		50 n/a		40
n/a		40	40	70 n/a		45	55	45 n/a	n/a	
n/a	n/a	n/a		75	80 n/a	n/a		65	70	60
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a		55	50	70	60	60	65 n/a	n/a	n/a	
	25	15	15 n/a	n/a		35	50	25 n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	80 n/a	n/a		80 n/a		90	90 n/a		75 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	65	80	55 n/a		70 n/a	n/a	n/a	n/a	n/a	
n/a		80 n/a		60	70 n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	45	60 n/a		90	40	60 n/a	n/a		55 n/a	
	45 n/a	n/a	n/a		30	55 n/a	n/a	n/a		40
n/a		60	60 n/a		85 n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	65 n/a		60 n/a	n/a		90	75 n/a	n/a		55
n/a		50 n/a		70	70	60 n/a	n/a		30	30
n/a	n/a	n/a	n/a		60 n/a		60	40 n/a		45

n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a			
	70	n/a		75		75	n/a	70	65	n/a	60	
	35	60	60	n/a		70	n/a	60	70	n/a	n/a	
n/a	n/a	n/a	n/a		n/a		55	n/a	n/a		20	
n/a		65	n/a			55	60	n/a	50	n/a	n/a	
	70	n/a	n/a		n/a	n/a		n/a	80	80	70	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a		55	n/a		n/a	n/a		50	n/a	40	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a		5	30	60	n/a	n/a		25	n/a	n/a	5	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
	50	55	n/a			50	n/a	n/a	n/a		50	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a		80	85	n/a	n/a	n/a		85	80	n/a	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a		90	n/a	n/a		85	n/a	80	n/a	
	75	n/a	n/a		75	n/a		90	n/a	65	n/a	75
n/a	n/a		60	75		95	n/a		70	65	70	
	75	n/a	75	n/a		70	85	n/a	85	65	n/a	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
	90	95	90	n/a		n/a		95	90	n/a	75	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a		75		55	80	n/a	n/a		80	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a		65	n/a		70	50	55	60	n/a	n/a	55	
n/a		85	60	60	n/a		90	n/a		80	n/a	50
n/a	n/a	n/a		80		85	n/a		90	45	n/a	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	80	n/a	85	n/a		70	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	70	n/a	n/a		n/a		75	90	n/a	n/a	n/a	
n/a	n/a		90	n/a			100	100	n/a	100	100	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		
n/a		85	80	90	n/a	n/a		90	80	n/a	n/a	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		

n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	90 n/a		65 n/a		45	50	50 n/a		50 n/a
n/a		60 n/a	n/a	n/a		60 n/a	n/a		70
	90 n/a	n/a	n/a	n/a		95	95 n/a	n/a	n/a
	95 n/a		95 n/a	n/a	n/a	n/a		95	95
	70	60 n/a		70	70 n/a	n/a		70 n/a	70
	55 n/a		65	60	40 n/a	n/a		45	35
n/a		60	70	75 n/a		60 n/a	n/a		50 n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	65 n/a		75	35	60	60	70	65 n/a	n/a
	65	65	45	80	n/a	n/a	70 n/a		60
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a		65 n/a	n/a		75	70 n/a		60	55
n/a		60 n/a	n/a	n/a		70 n/a	n/a		50
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	80 n/a		85 n/a	n/a		80 n/a	n/a		80
n/a		80	15 n/a		65 n/a		75 n/a	n/a	
n/a	n/a	n/a	n/a		60	80 n/a		80 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a		75 n/a	n/a		75 n/a		80 n/a	n/a	n/a
n/a		70	70 n/a		70 n/a		80	80 n/a	n/a
	85 n/a		70	90	40	80 n/a		95 n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a		60	20	70 n/a	n/a		65
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a		85 n/a	n/a		95 n/a	n/a		90 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a		85	90 n/a		80 n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a		100	100	75	n/a	100 n/a		100 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a		60 n/a		65	70 n/a	n/a	n/a	n/a
	85	90	70	80	n/a	n/a	100 n/a		70
	80	75 n/a		80	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a		80 n/a	n/a		75	80	80 n/a	n/a	
	60 n/a		50	75	75	70 n/a		85	55
	65 n/a	n/a	n/a		65	60 n/a		65 n/a	
	90 n/a	n/a		90	n/a	n/a	n/a	n/a	n/a
	35 n/a	n/a	n/a		40	75 n/a		60	55

n/a	n/a	n/a	n/a		60	n/a	n/a	65	n/a	
	80	n/a	70	95	100	n/a	n/a		80	85
	70	n/a		75	n/a	95	n/a	n/a	n/a	
	55	n/a	50	n/a	75	60	70	65	45	50
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a		55	50	65	n/a	n/a	70	80	n/a	30
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	75	n/a		90	80	90	n/a		80	n/a
	80	65	70	80	n/a	65	n/a	n/a		65
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	70	60	40	70	70	75	n/a	60	n/a	
n/a		95	95	n/a		95	95	n/a	90	95
n/a	n/a	n/a		100	80	n/a	n/a	n/a		70
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	60	70	65	75	60	60	65	n/a	n/a	
n/a		65	75	n/a		75	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	15	n/a	5	n/a	100	75	100	n/a	5	15
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	80	70	80	n/a	75	55	n/a	45	70	50
n/a		45	60	n/a	n/a	70	n/a	50	n/a	45
	75	90	n/a	80	55	55	60	60	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	85	n/a	75	n/a	25	100	n/a	75	50	75
n/a		70	60	n/a	n/a	50	n/a		70	50
n/a	n/a		75	n/a	n/a	n/a	n/a	n/a		65
	70	n/a	75	85	n/a	n/a	85	n/a	70	n/a

n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	95	75 n/a		90	70	90 n/a	n/a		45	85
	95 n/a	n/a		70 n/a	n/a	n/a		85 n/a		40
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	75 n/a		95 n/a	n/a		90	95	85	90 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a		15 n/a	n/a		75	60 n/a		40 n/a	
	100 n/a	n/a		90 n/a		90 n/a		90	70 n/a	
n/a	n/a		60 n/a	n/a	n/a		90	75	55	55
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a		75	65 n/a	n/a		80	55	60 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	50 n/a		65 n/a	n/a	n/a	n/a		60 n/a	n/a	
n/a		60 n/a		30	85	45 n/a		65 n/a	n/a	
	65	75 n/a	n/a		60 n/a	n/a	n/a	n/a		65
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	80	85	65 n/a	n/a	n/a		90	60 n/a	n/a	
n/a	n/a		45 n/a	n/a		80 n/a	n/a	n/a		55
	100	85 n/a		100 n/a	n/a	n/a	n/a	n/a		90
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	60 n/a	n/a		95	70 n/a	n/a	n/a	n/a		75
n/a		90	75	95	50	90 n/a		55 n/a		75
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	55	20	70 n/a		75 n/a	n/a		80 n/a		15
n/a	n/a		80	70 n/a		70 n/a		60 n/a		65
n/a		60	55	75 n/a	n/a	n/a		45	50 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a		70 n/a		60 n/a		80	65 n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a		65	65	60	60	55	65 n/a		60	55
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a		75 n/a	n/a	n/a		90 n/a		80	75
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a		90	70 n/a	n/a	n/a		90 n/a	n/a		50
	65	65	65 n/a	n/a	n/a		80 n/a	n/a		60
n/a		70 n/a	n/a	n/a	n/a	n/a	n/a	n/a		90
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
n/a			80	85	85 n/a	n/a	n/a	n/a		80
	75 n/a		50 n/a		85	60	50	55 n/a	n/a	

n/a	n/a		65	70		55	n/a	n/a	n/a	50	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
	85	75	80	65	n/a	n/a		80	n/a		75
n/a		70	70	n/a		n/a		40	40	n/a	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
	50	n/a	n/a		55	n/a	55	70	60	n/a	45
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
n/a		60	50	70		40	75	n/a	n/a	50	50
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
	75	n/a	n/a			70	80	n/a	n/a	70	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
	70	n/a	n/a		75	n/a		80	n/a	75	65
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a		85	n/a		n/a	n/a		95	n/a	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
n/a		25	n/a		55		45	n/a	n/a	n/a	40
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a		75		70	70	70	n/a	70	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
	75	n/a	40	n/a		40	n/a	90	70	50	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
	80	80	80	n/a		80	85	85	80	n/a	n/a
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a		90	n/a		80	n/a	n/a	n/a	75
n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	

69.87805 67.34177 63.75 74.75 64.71591 71.3253 76.83099 65.75949 62.53623 58.31522



Fb7	Fb8	Fb9	Fb10	Fb11	Fb12	Fc1_Mc5	Fc1_Mc6	Fc1_Mc10
n/a		65	70 n/a	n/a		80		
n/a		60 n/a	n/a		85	80		
n/a	n/a	n/a	n/a	n/a	n/a			
n/a	n/a	n/a	n/a	n/a	n/a			
	40 n/a	n/a		35 n/a	n/a			
	15	50 n/a		15	35	40		
	40 n/a		80 n/a		75 n/a			
	50	65 n/a	n/a	n/a	n/a			
	70	70 n/a	n/a	n/a		90		
n/a	n/a	n/a	n/a	n/a	n/a			
	25 n/a		35	25 n/a		50		
	65 n/a		70 n/a	n/a		85		
	45	45	55 n/a	n/a	n/a			
n/a	n/a	n/a	n/a	n/a	n/a	65		
n/a	n/a	n/a	n/a	n/a	n/a			
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n/a	n/a	n/a	n/a	n/a	n/a			
n/a		65 n/a		65	80 n/a			
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n/a	n/a	n/a	n/a	n/a	n/a			
n/a		40 n/a		45	45	50		
	50	55	65 n/a		65	65		
	50	70 n/a	n/a		65	75		
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	50 n/a		35 n/a	n/a	n/a			
	30	40	60	75	60 n/a			
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n/a	n/a	n/a	n/a	n/a	n/a			
n/a	n/a	n/a	n/a	n/a	n/a			
	70	80 n/a	n/a	n/a		55		
n/a	n/a		70 n/a		75 n/a			
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	85 n/a		80 n/a	n/a		85		
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	50	60	60 n/a	n/a	n/a			
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n/a	n/a	n/a	n/a	n/a	n/a			
n/a		65 n/a		70 n/a	n/a			
	30	30 n/a	n/a	n/a	n/a			
n/a	n/a	n/a	n/a	n/a	n/a			
n/a		75	65 n/a		55	90		
	40 n/a		60 n/a		70	75		
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	70 n/a	n/a		65 n/a		75		
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n/a	n/a	n/a	n/a	n/a	n/a			
n/a	n/a	n/a	n/a	n/a	n/a			
n/a		60	65	75 n/a		70		
	40 n/a	n/a	n/a	n/a	n/a			
	75	65 n/a	n/a		75 n/a			
n/a	n/a	n/a	n/a	n/a	n/a			
n/a		70	70 n/a		70	70		
n/a	n/a	n/a		75 n/a	n/a			
n/a	n/a	n/a		75	65	65		
	50 n/a	n/a		85	80 n/a			
	40	40 n/a		65	65	65		

	65	n/a	70	45	50	80	
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	40	50	n/a	n/a	n/a		
n/a	n/a		85	n/a		95	
n/a		65	75	70	90	n/a	
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n/a	n/a	n/a	n/a	n/a	n/a		
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	40	n/a	65	n/a		80	
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	75	n/a		80	n/a		

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n/a		55 n/a		75	85 n/a	
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	90	90 n/a		100	95 n/a	
	40 n/a		85	45 n/a		85
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n/a	n/a	n/a	n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	
n/a		40	45	60 n/a	n/a	
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n/a	n/a	n/a	n/a	n/a	n/a	90
n/a		65 n/a		70 n/a		85
	30 n/a		95 n/a		90 n/a	
	55 n/a	n/a	n/a		70	80
n/a	n/a	n/a	n/a	n/a	n/a	
	75 n/a	n/a	n/a	n/a		80
	15 n/a		70	45 n/a		85
n/a	n/a	n/a	n/a		75 n/a	
n/a	n/a	n/a	n/a	n/a	n/a	75
n/a		60 n/a		65	80 n/a	
n/a		70	80 n/a	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a	
n/a		65 n/a	n/a	n/a		95
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n/a	n/a		70	70 n/a		70
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n/a		45	55 n/a	n/a	n/a	
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n/a	n/a	n/a	n/a	n/a	n/a	85
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n/a		65 n/a		55 n/a		55

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	50	n/a	n/a	n/a	n/a		
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n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a	n/a	n/a		
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n/a	n/a	n/a	n/a	n/a	n/a		85
n/a	n/a	n/a	n/a	n/a	n/a	80	
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	75	80	n/a	80	n/a	85	
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	50	n/a		90	n/a	n/a	
n/a	n/a	n/a	n/a	n/a	n/a		
	50	65	65	n/a	75	n/a	
n/a	n/a		50	n/a		85	
n/a	n/a	n/a	n/a	n/a	n/a		
n/a		20	n/a	n/a	n/a		
n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a		45	40	n/a	75	
	55	n/a	65	n/a		85	
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n/a	n/a	n/a	n/a	n/a	n/a		
	65	70	70	75	n/a	n/a	
n/a	n/a	n/a	n/a		55	65	
n/a	n/a	n/a	n/a	n/a	n/a		
n/a	n/a	n/a	n/a	n/a	n/a		
n/a		5	10	10	15	n/a	
n/a	n/a		85	n/a	85	n/a	
n/a	n/a	n/a	n/a	n/a	n/a		
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	60	n/a	n/a	n/a		95	
n/a	n/a	n/a	n/a	n/a	n/a		

	50	60	70	85	n/a	n/a			
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n/a		55	n/a	n/a	n/a	n/a			
n/a	n/a		55	n/a	n/a		45		
n/a	n/a	n/a	n/a	n/a	n/a	n/a			
n/a	n/a	n/a	n/a	n/a	n/a	n/a		80	
n/a	n/a	n/a	n/a	n/a	n/a	n/a			
n/a		65	n/a	55	50	n/a			
n/a	n/a	n/a	n/a	n/a	n/a	n/a			
	70	n/a		80	n/a	n/a			
n/a	n/a	n/a	n/a	n/a	n/a	n/a		55	
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n/a	n/a	n/a	n/a	n/a	n/a	n/a		70	
	80	75	n/a	55	70	n/a			
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n/a	n/a	n/a	n/a	n/a	n/a	n/a			75
n/a		70	75	65	75	n/a			
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	40	n/a	n/a	80	n/a		85		
n/a	n/a	n/a	n/a	n/a	n/a	n/a			
	80	n/a	n/a	n/a	n/a		85		
n/a	n/a	n/a	n/a	n/a	n/a	n/a			
n/a	n/a		70	70	80	n/a			
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56.4

60

67.3125

65.84337

69.07143

75.5487804878

77.5

74.58333

84.28571

						Female Alone			
					Average	68.72427983539			
					SD	18.63919431163			

Fc1_Mb1 Fc1_Mb3 Fc1_Mb7 Fb1_Mc2 Fb1_Mc4 Fb1_Mc11Fb1_Mb8 Fb1_Mb9 Fb1_Mb12Fc2_Mc1

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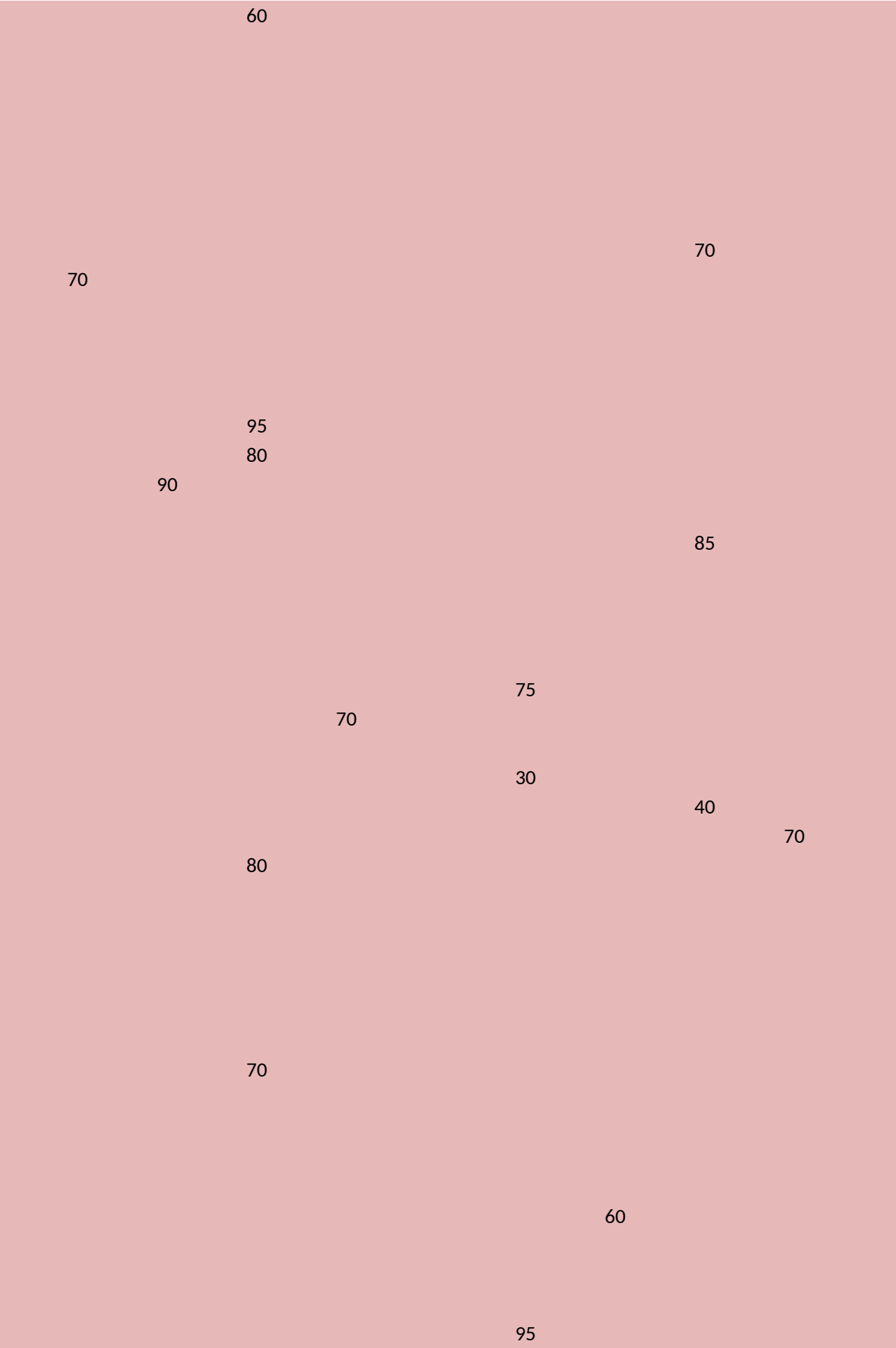
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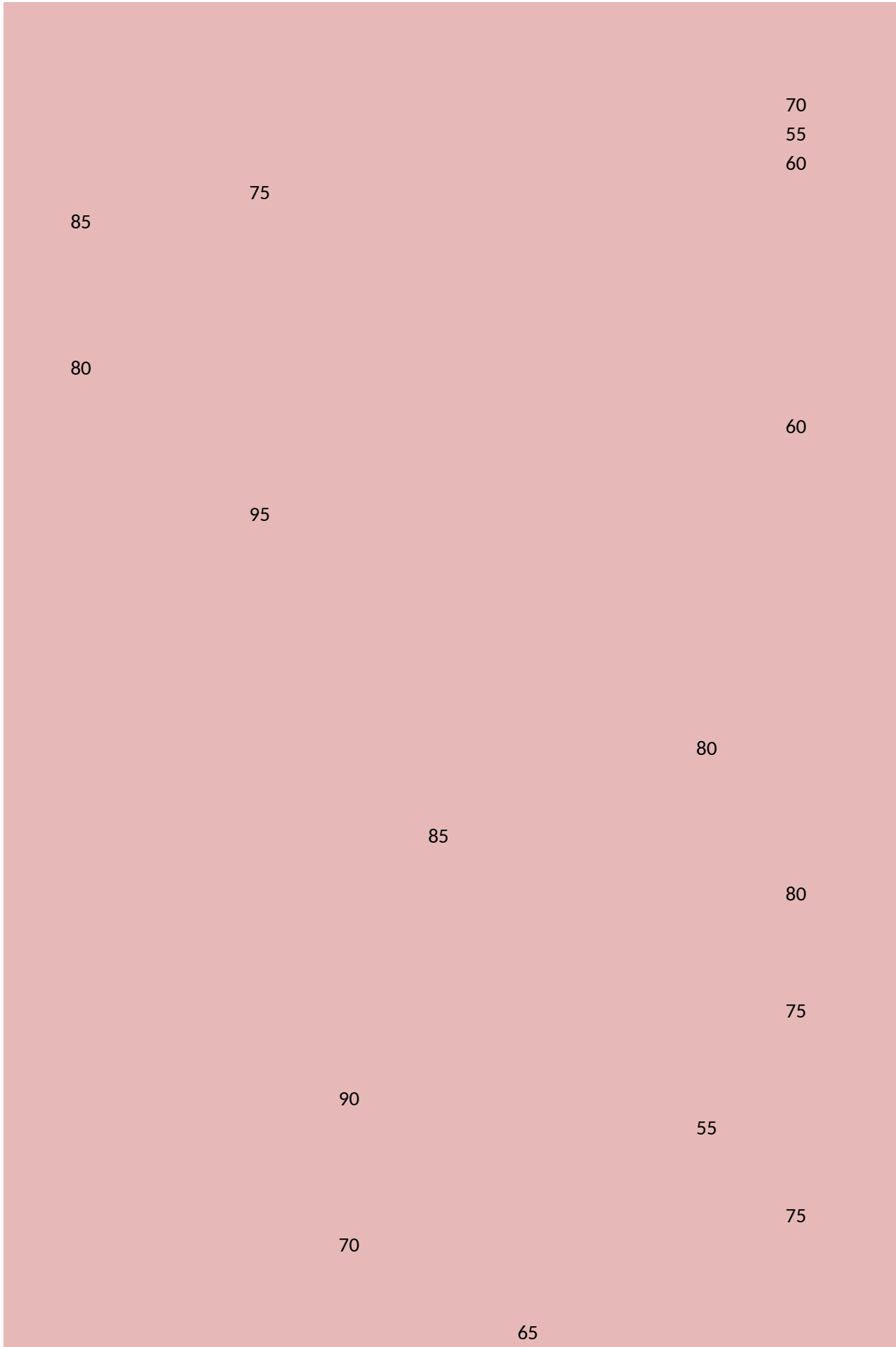
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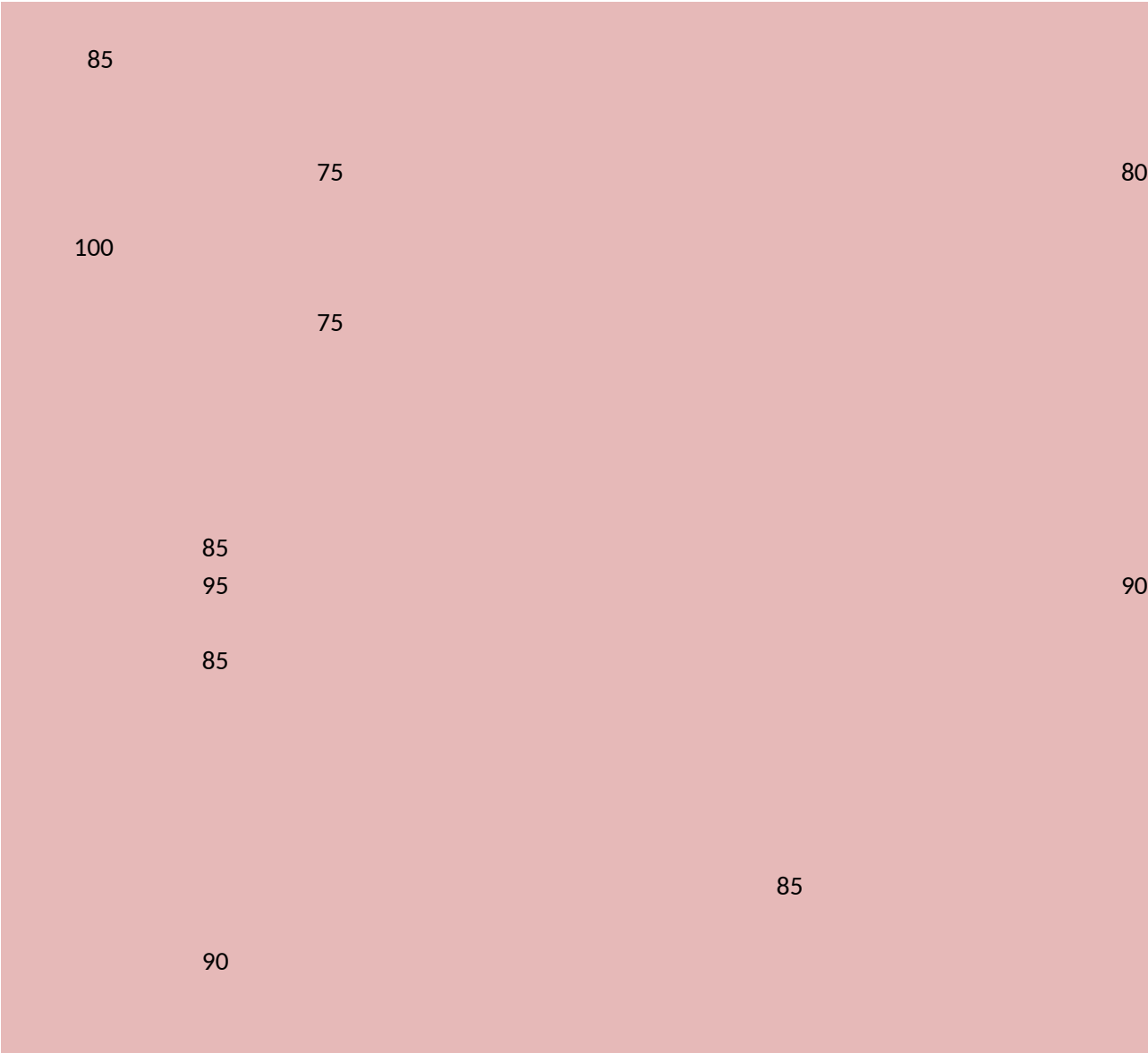
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81.25 85.66667 74.41176 76.78571 70.625 67 72.14286 71.92308 69.64286 80



Fc2_Mc4 Fc2_Mc11 Fc2_Mb7 Fc2_Mb9 Fc2_Mb12 Fb2_Mc2 Fb2_Mc3 Fb2_Mc10 Fb2_Mb5 Fb2_Mb6

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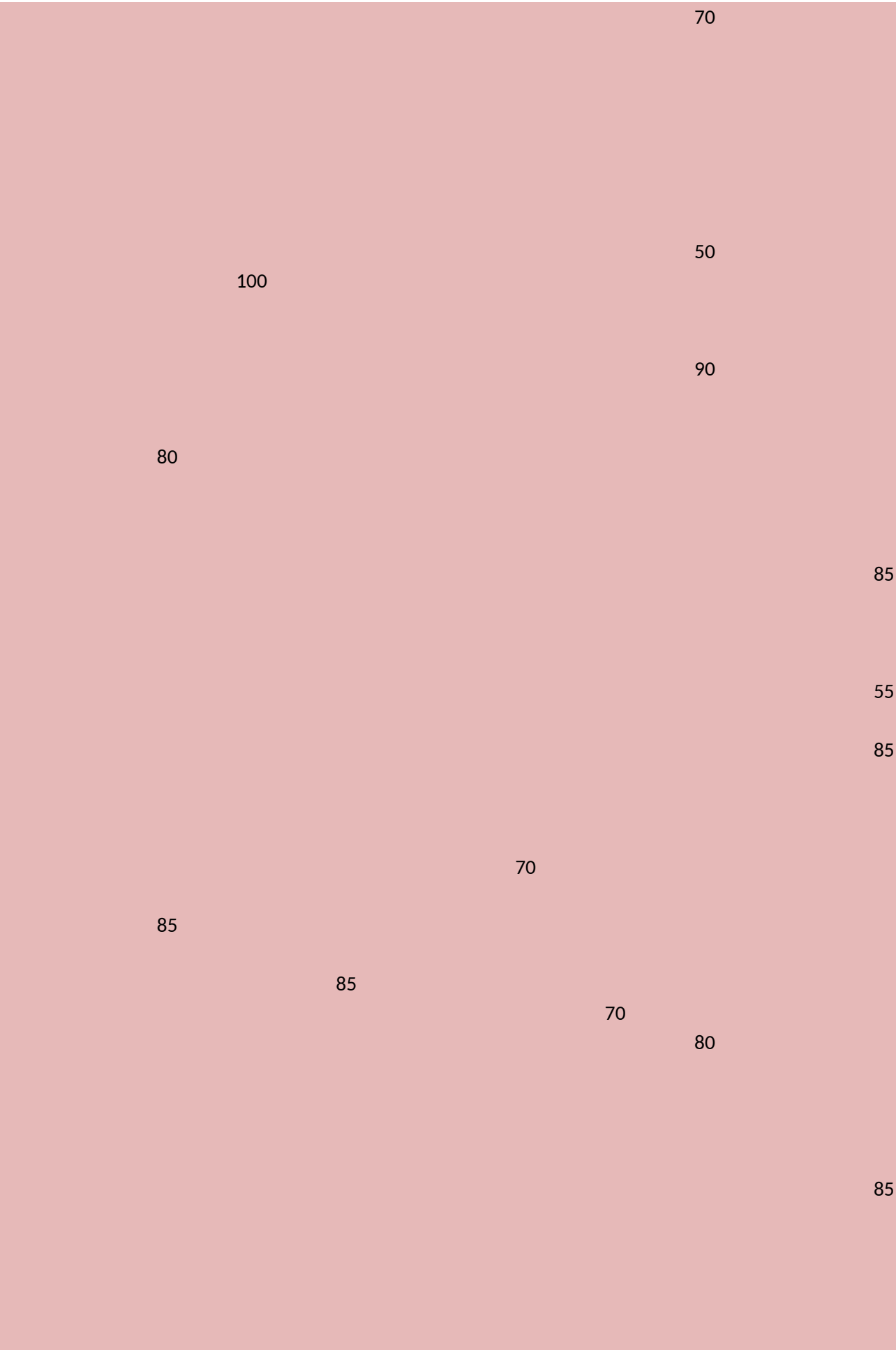
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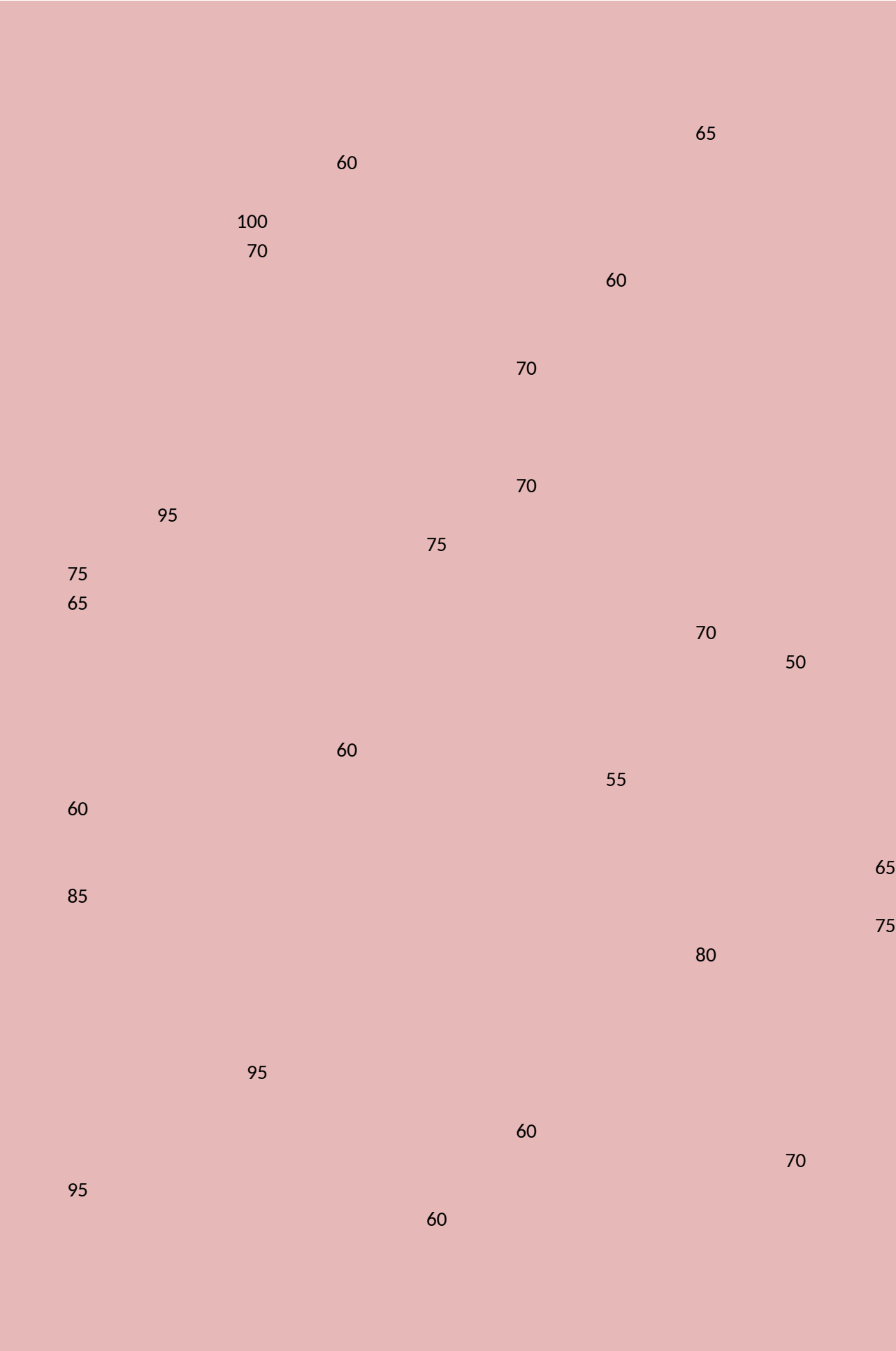
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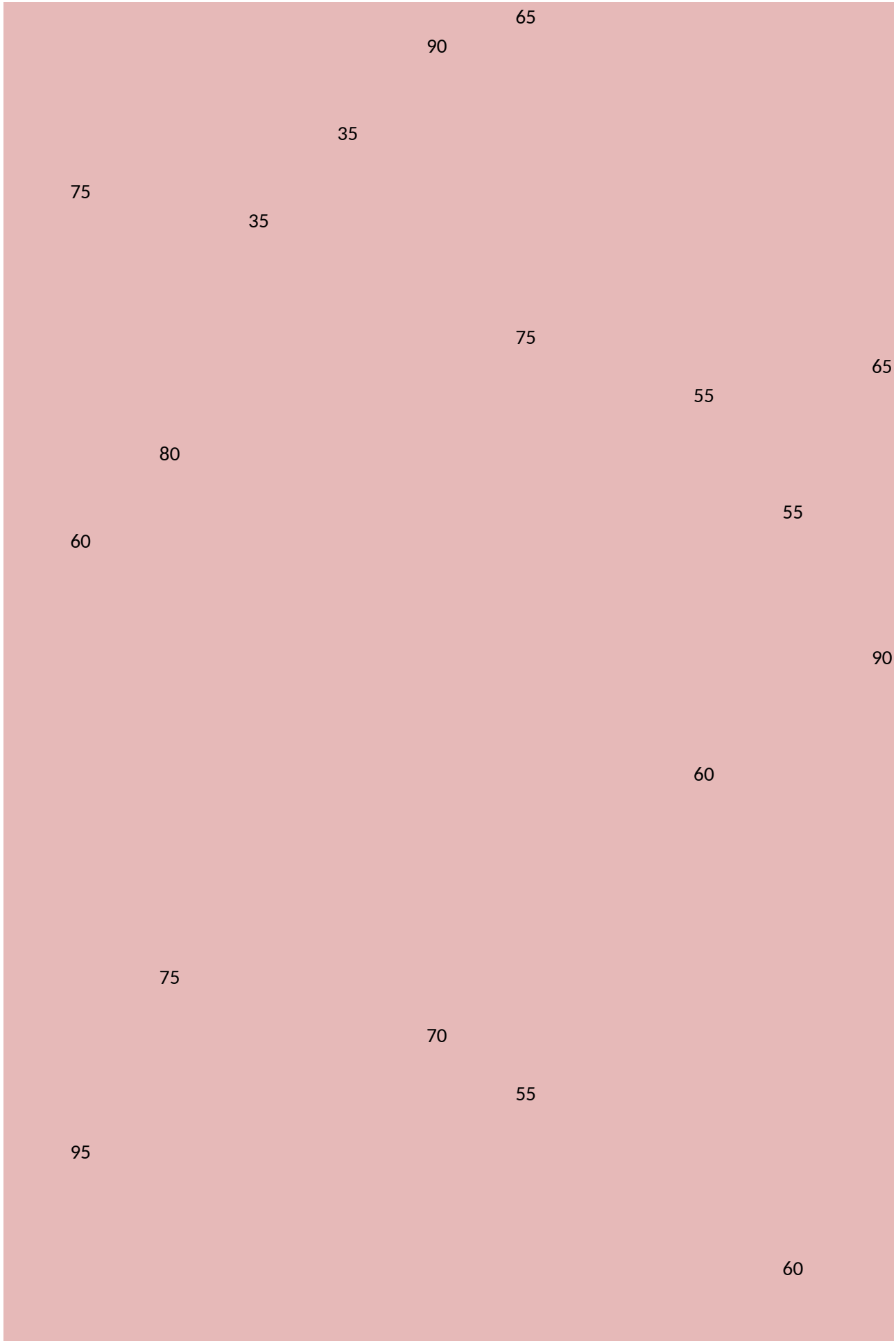
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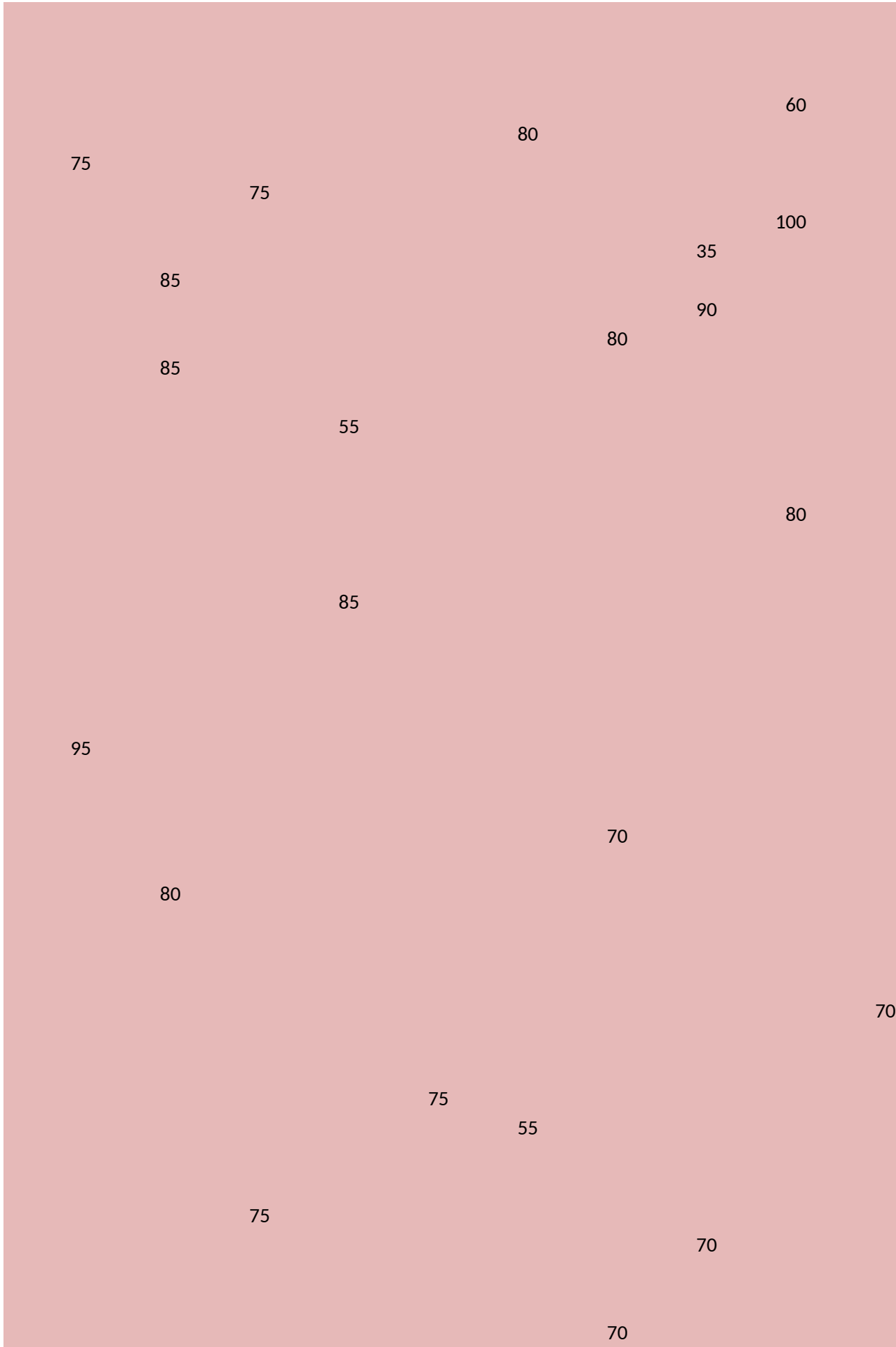
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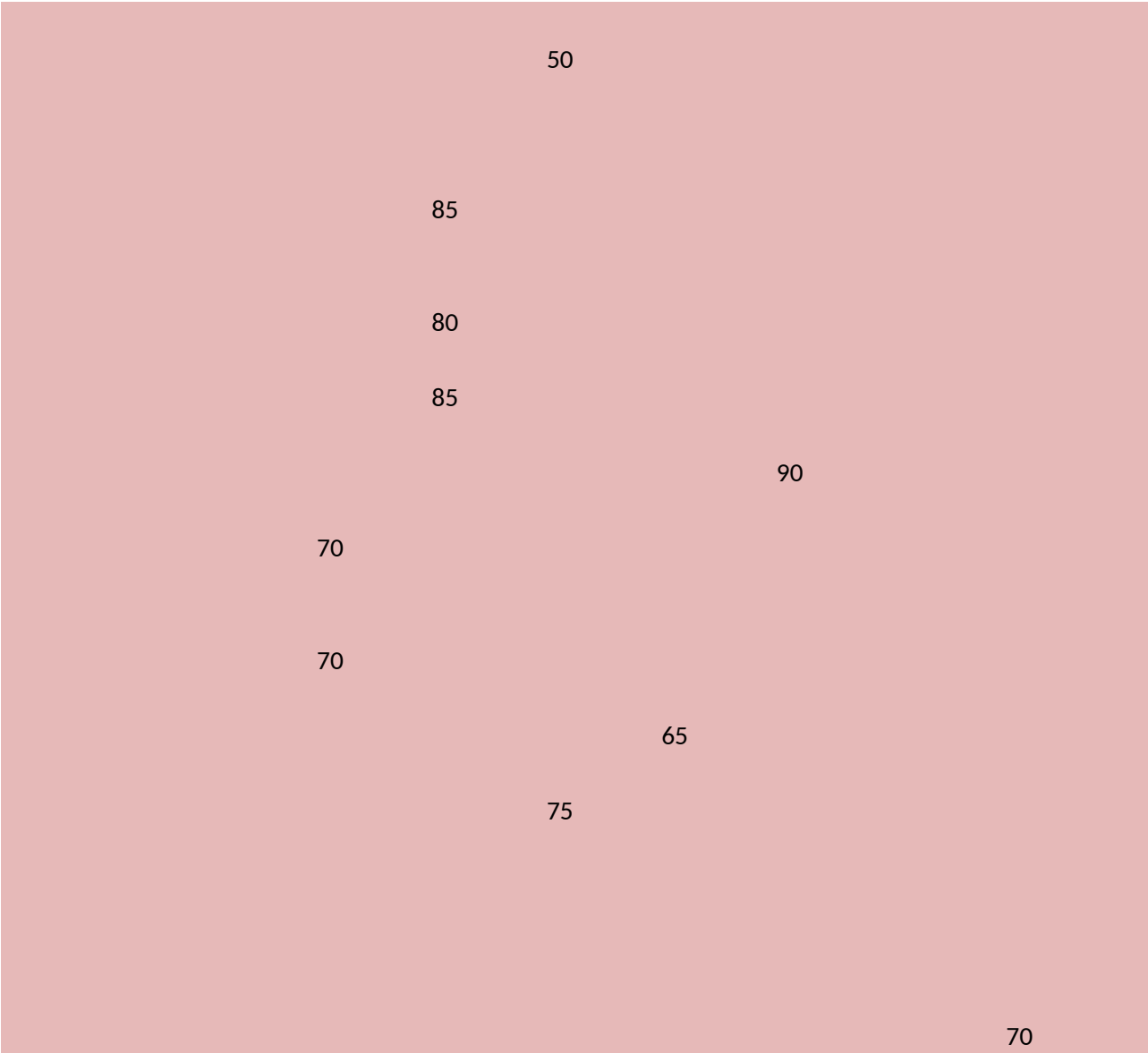






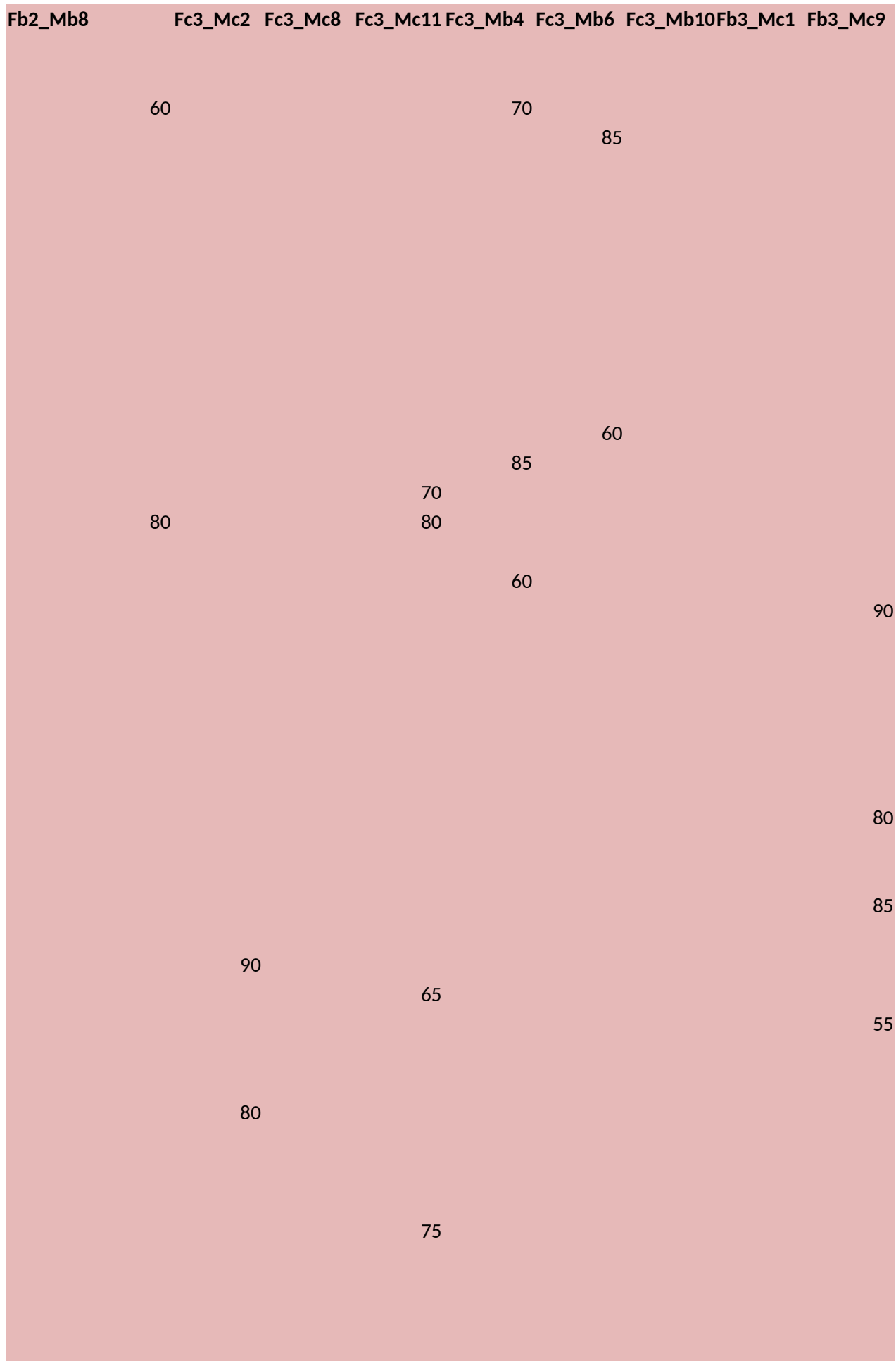


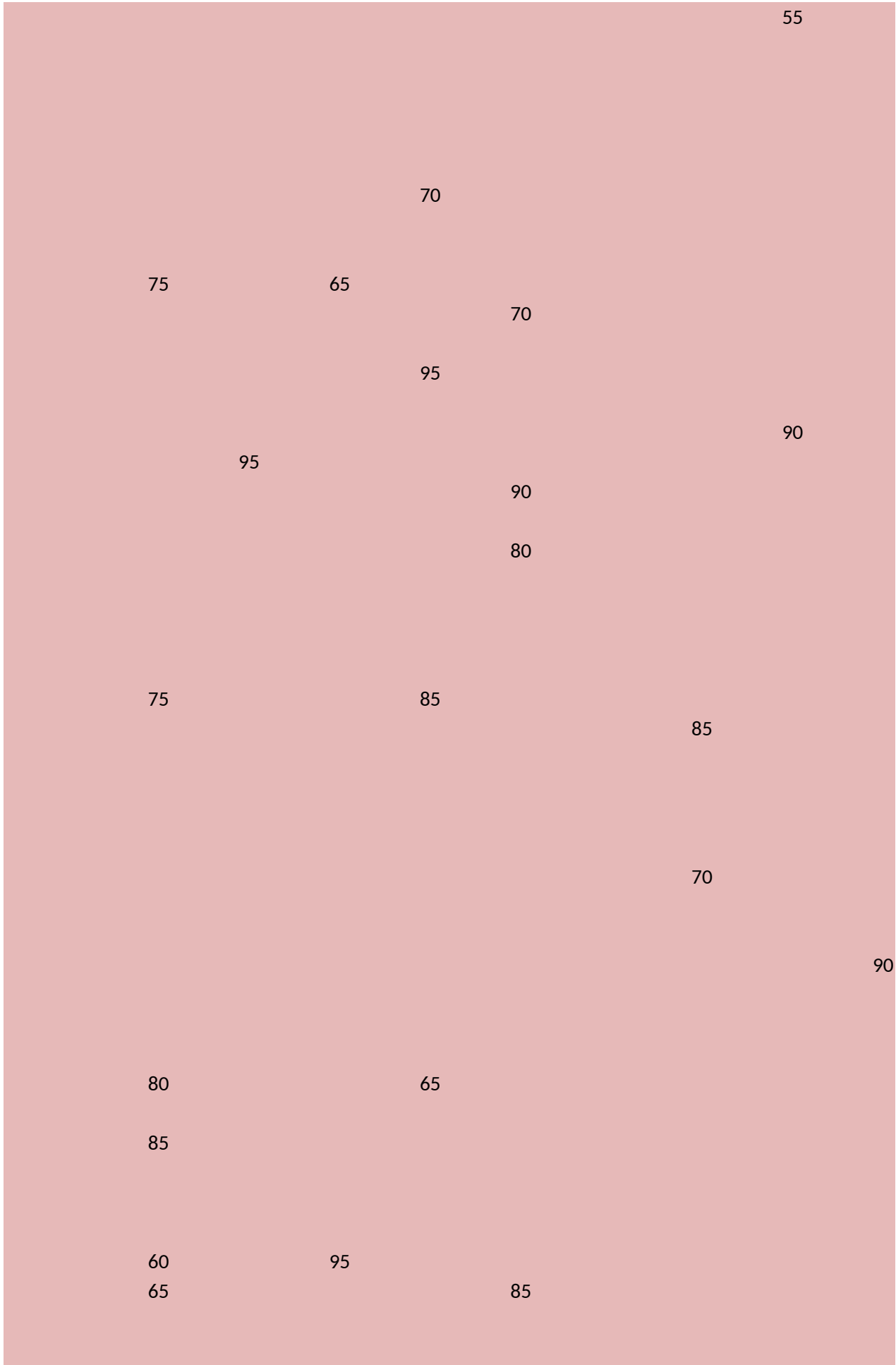


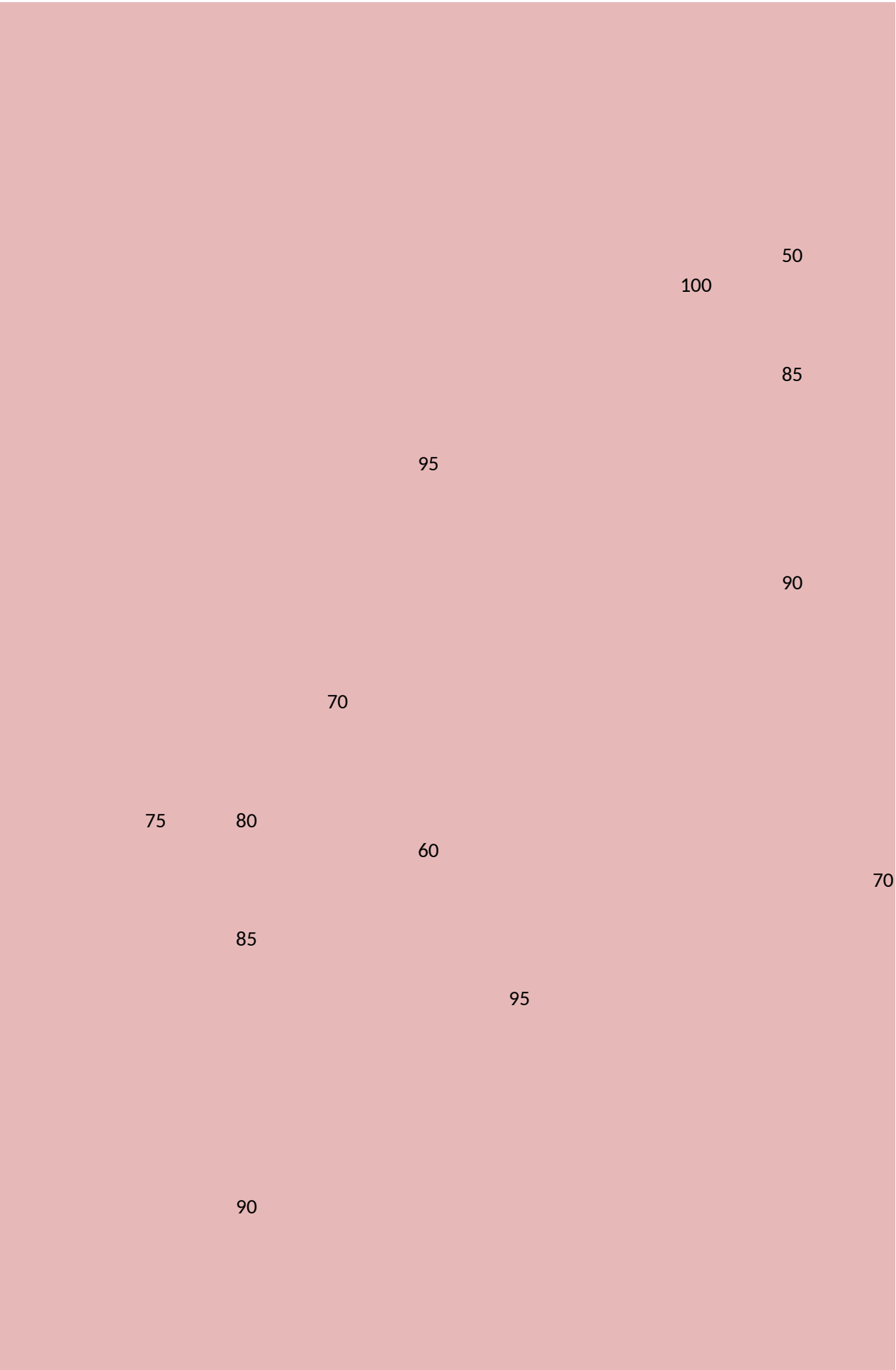


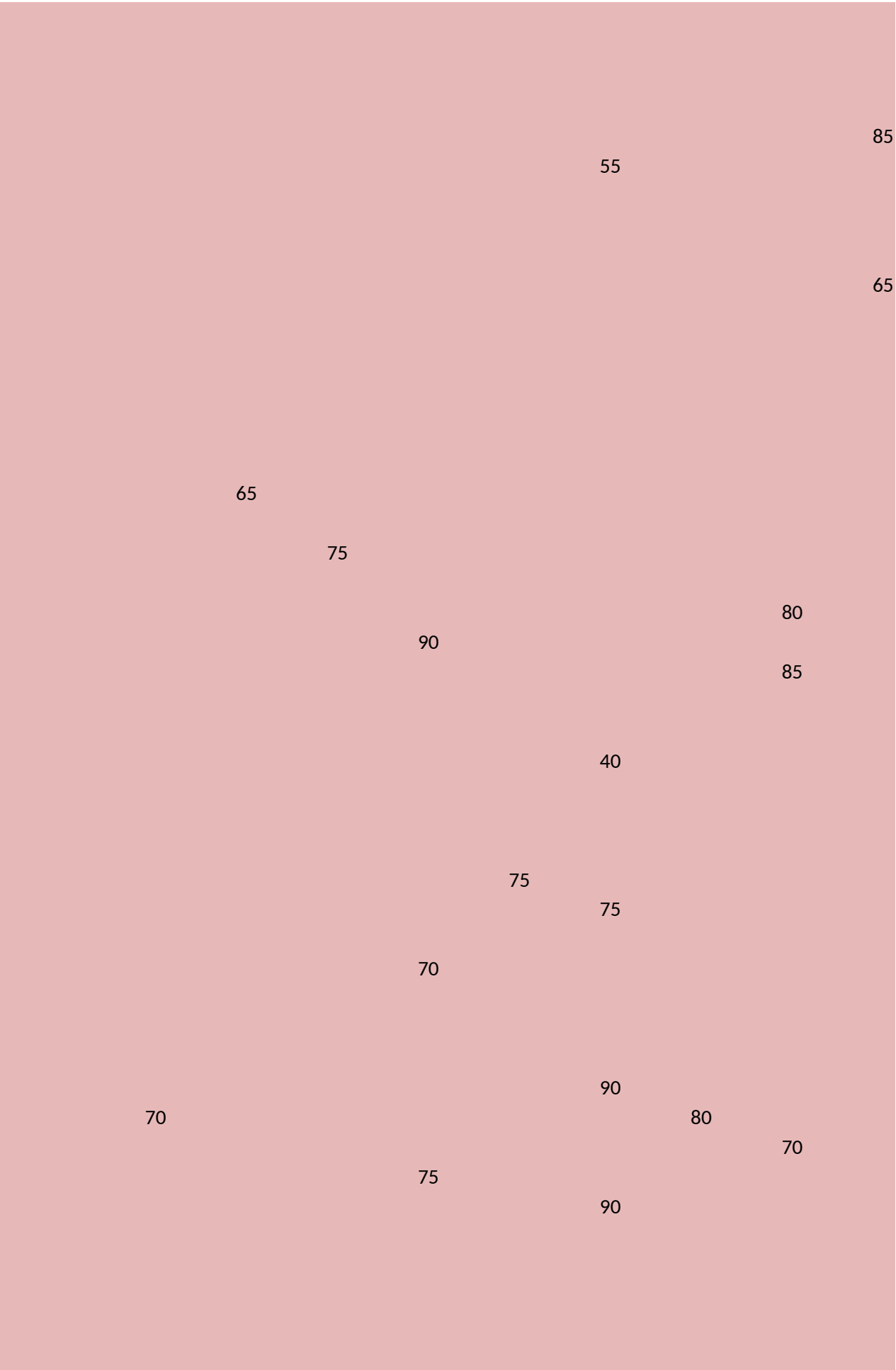
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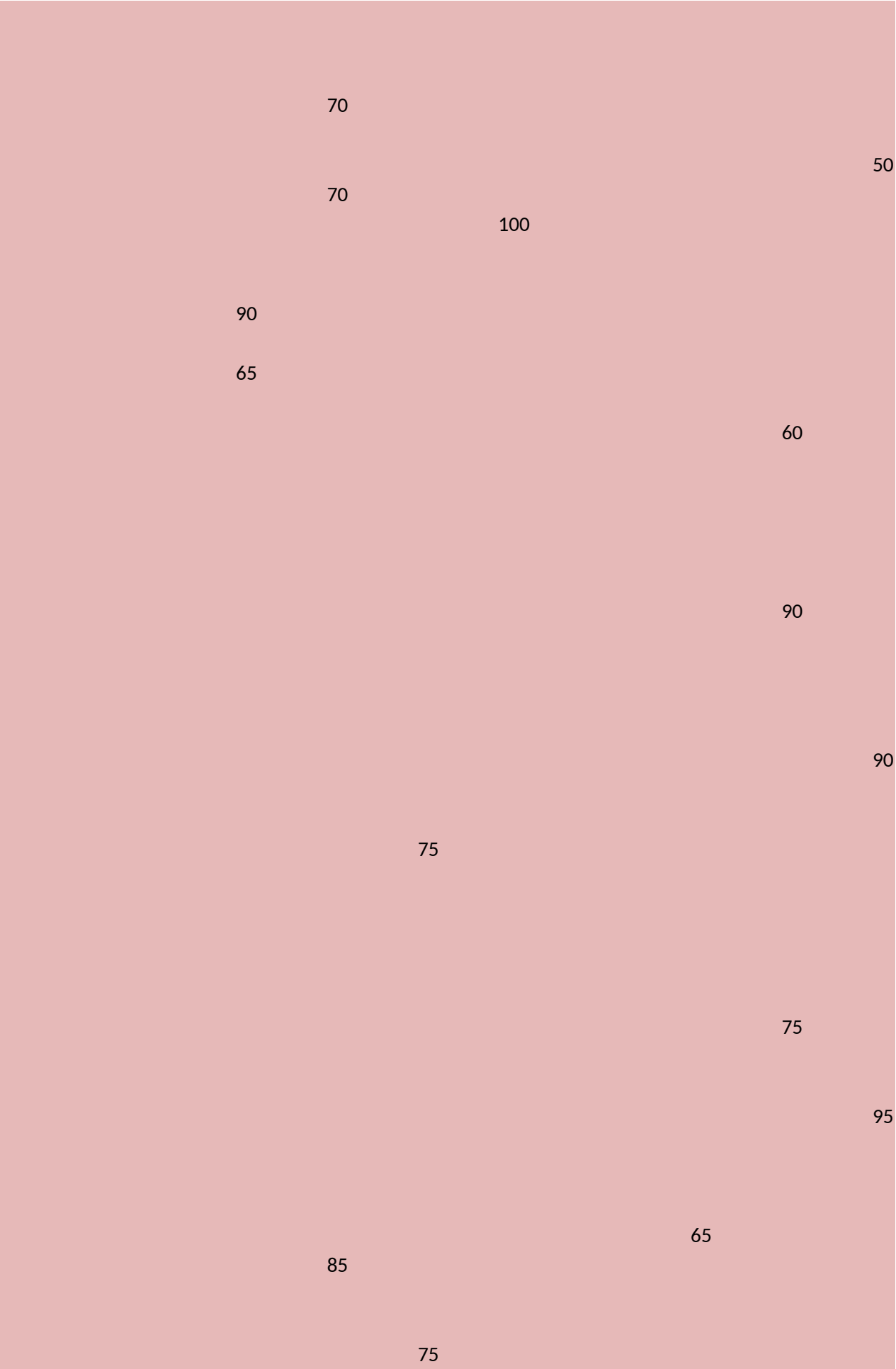
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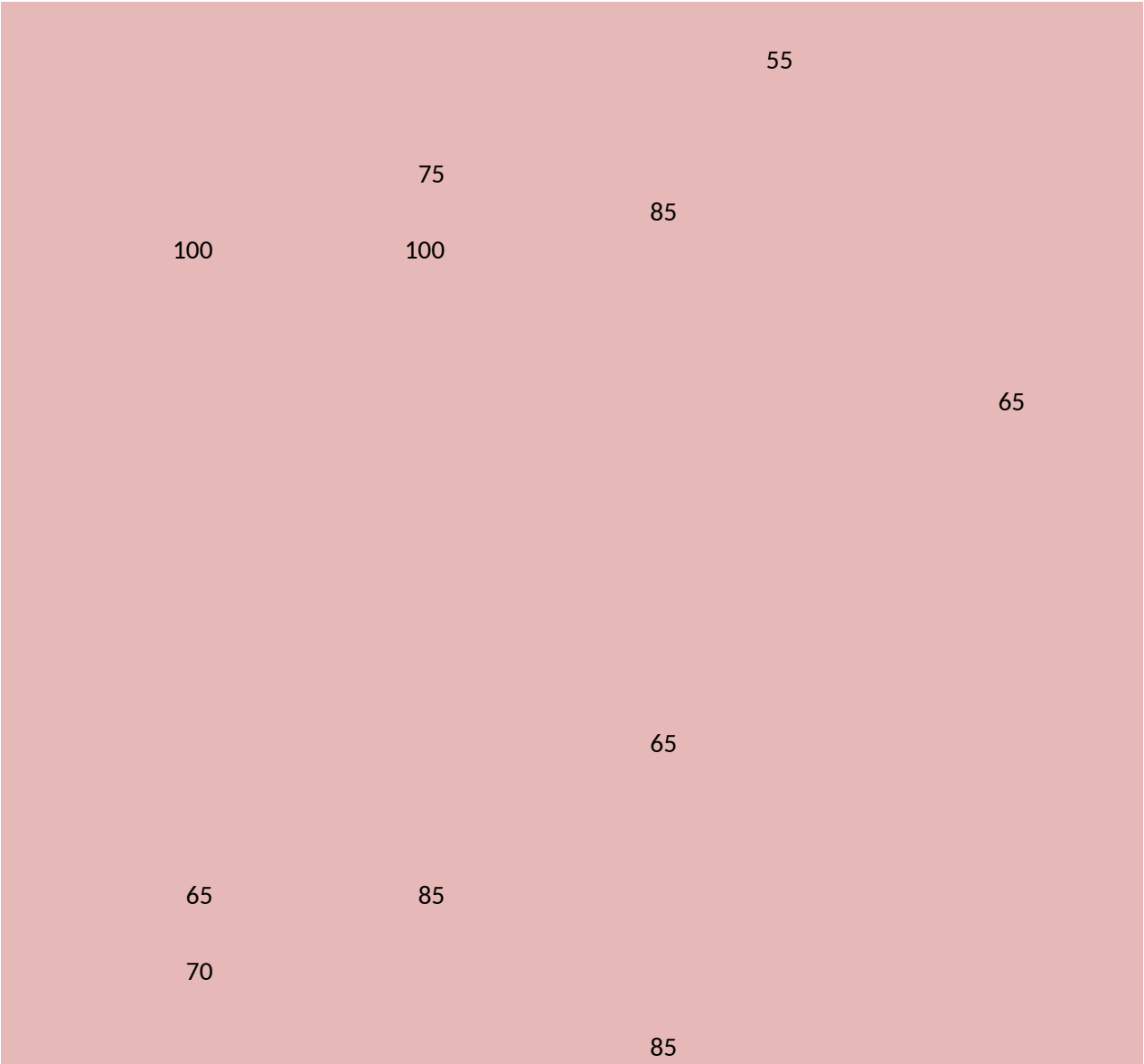
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Fb3_Mc12Fb3_Mb3 Fb3_Mb5 Fb3_Mb7 Fc4_Mc5 Fc4_Mc7 Fc4_Mc8 Fc4_Mb9 Fc4_Mb10Fc4_Mb11

75

80

75

85

65

60

85

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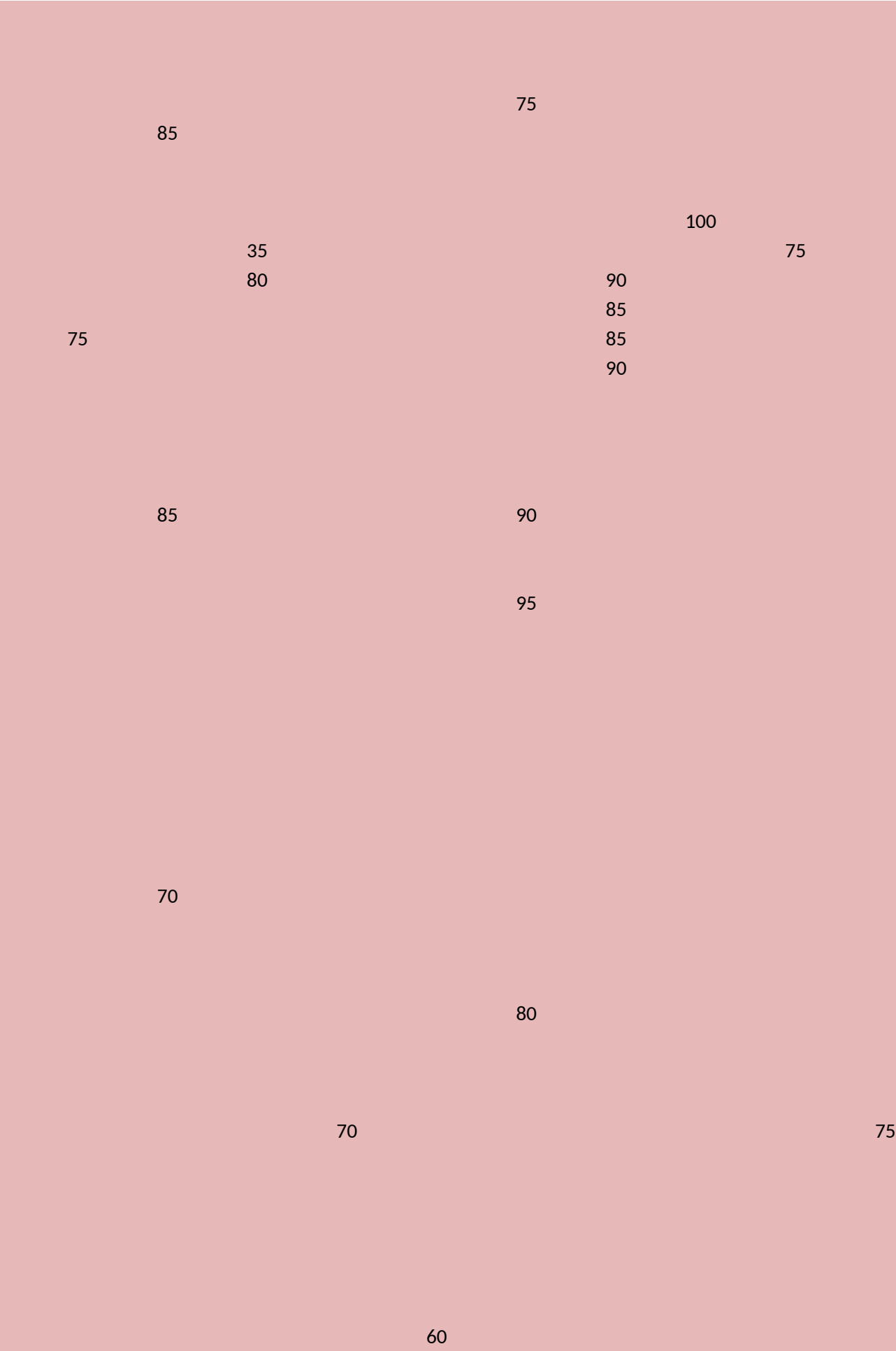
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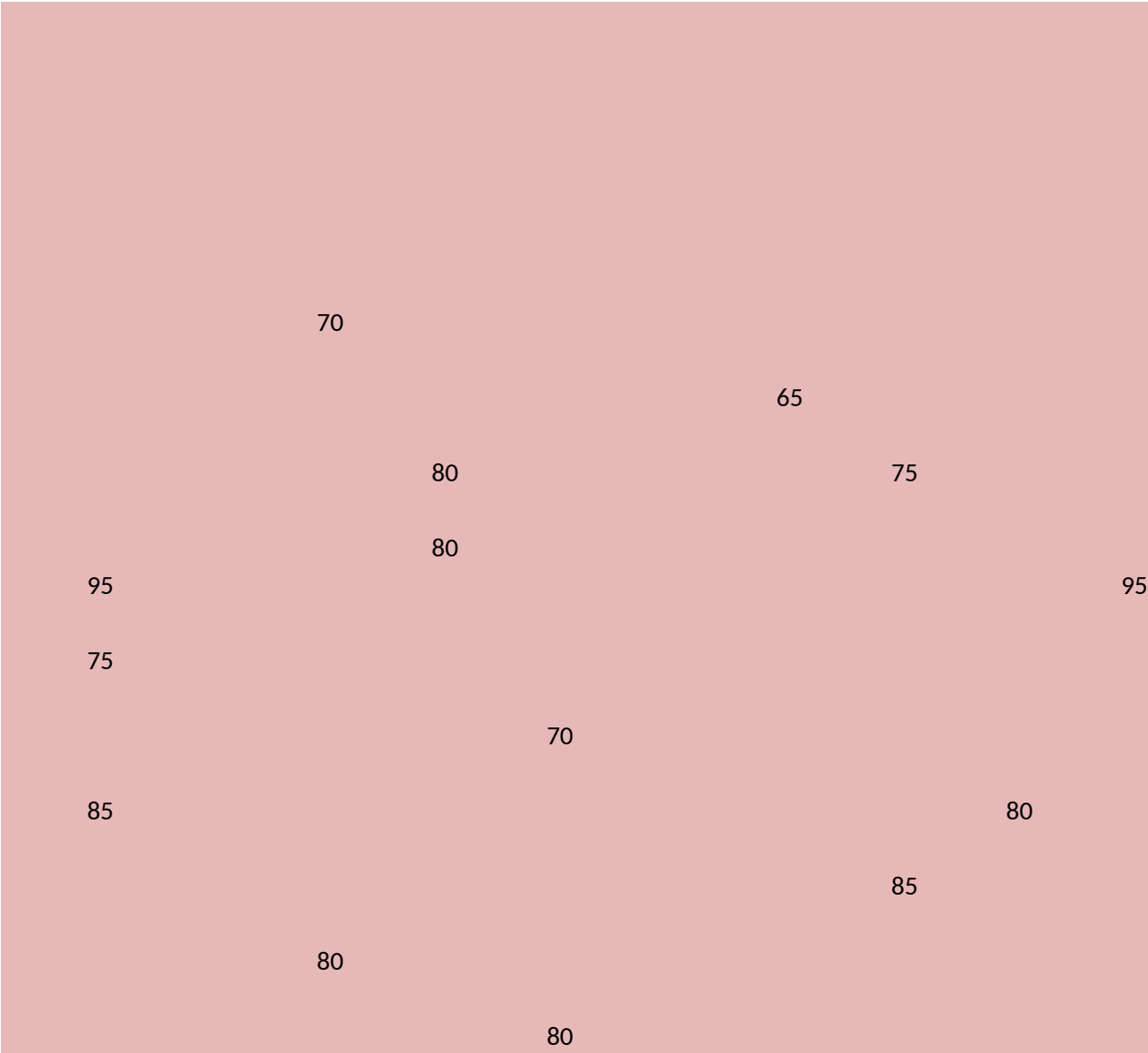
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Fb4_Mc2 Fb4_Mc6 Fb4_Mc12Fb4_Mb1 Fb4_Mb3 Fb4_Mb4 Fc5_Mc8 Fc5_Mc10 Fc5_Mc12 Fc5_Mb1

75

50

80

75

75

65

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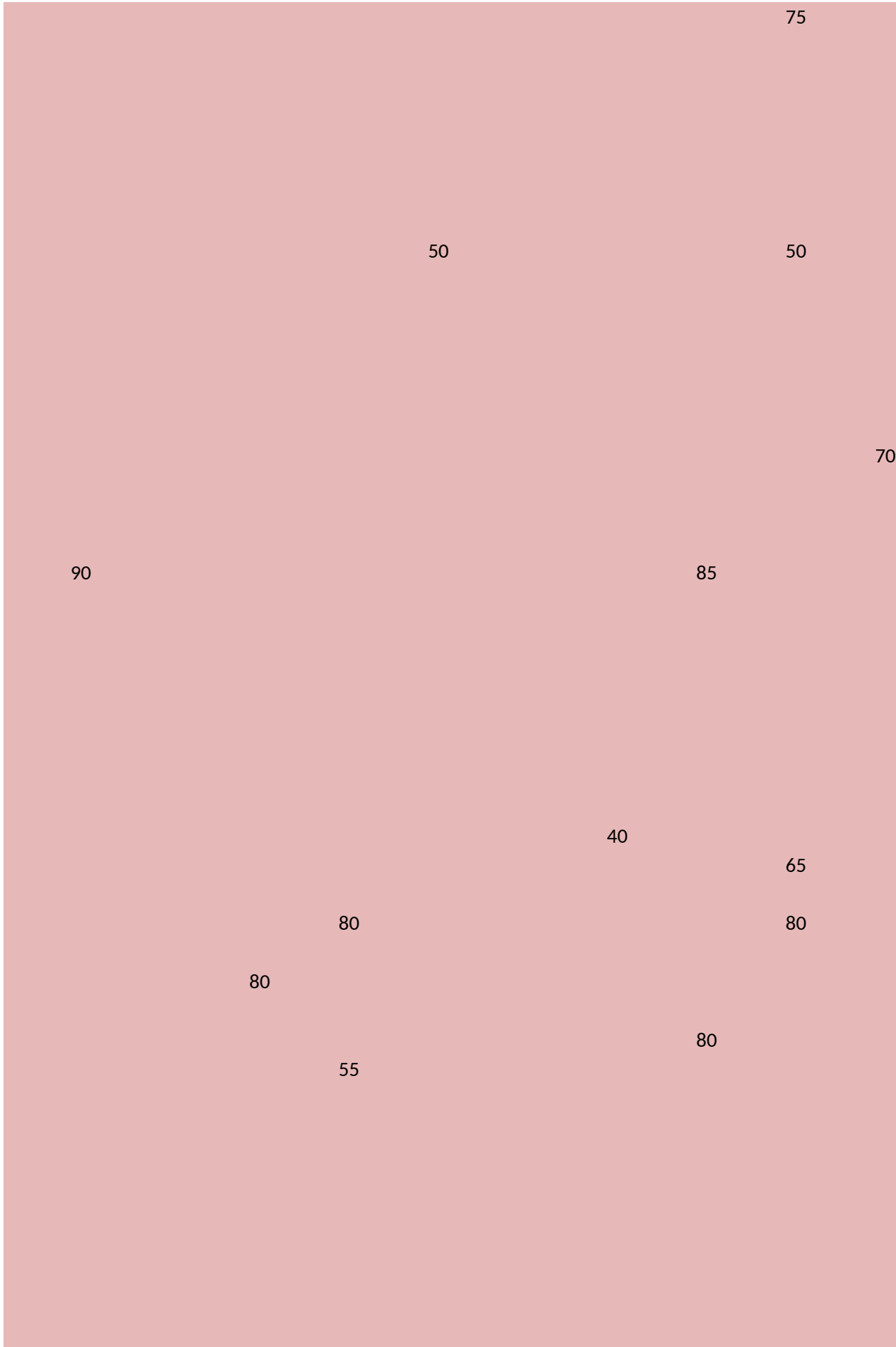
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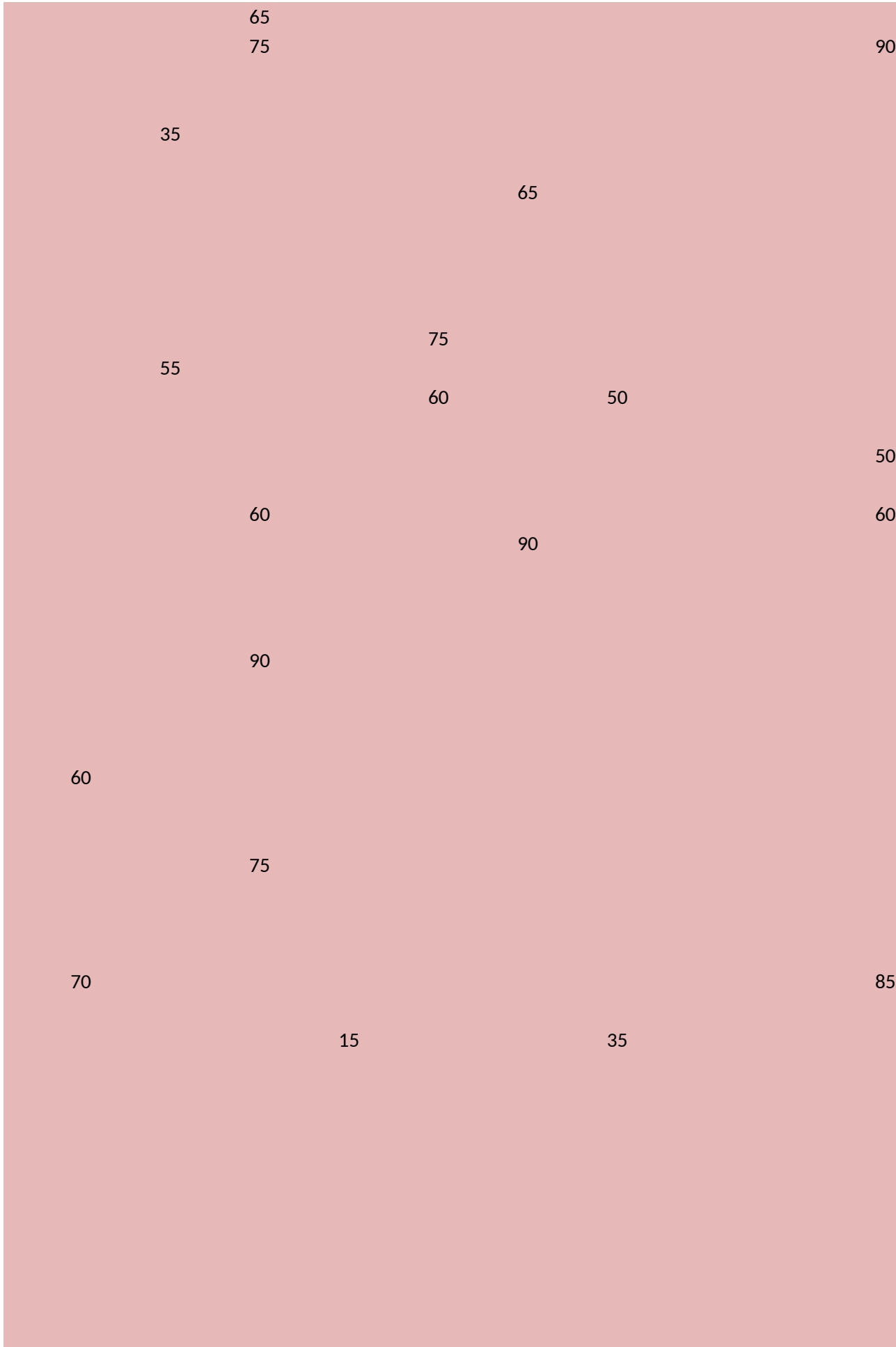
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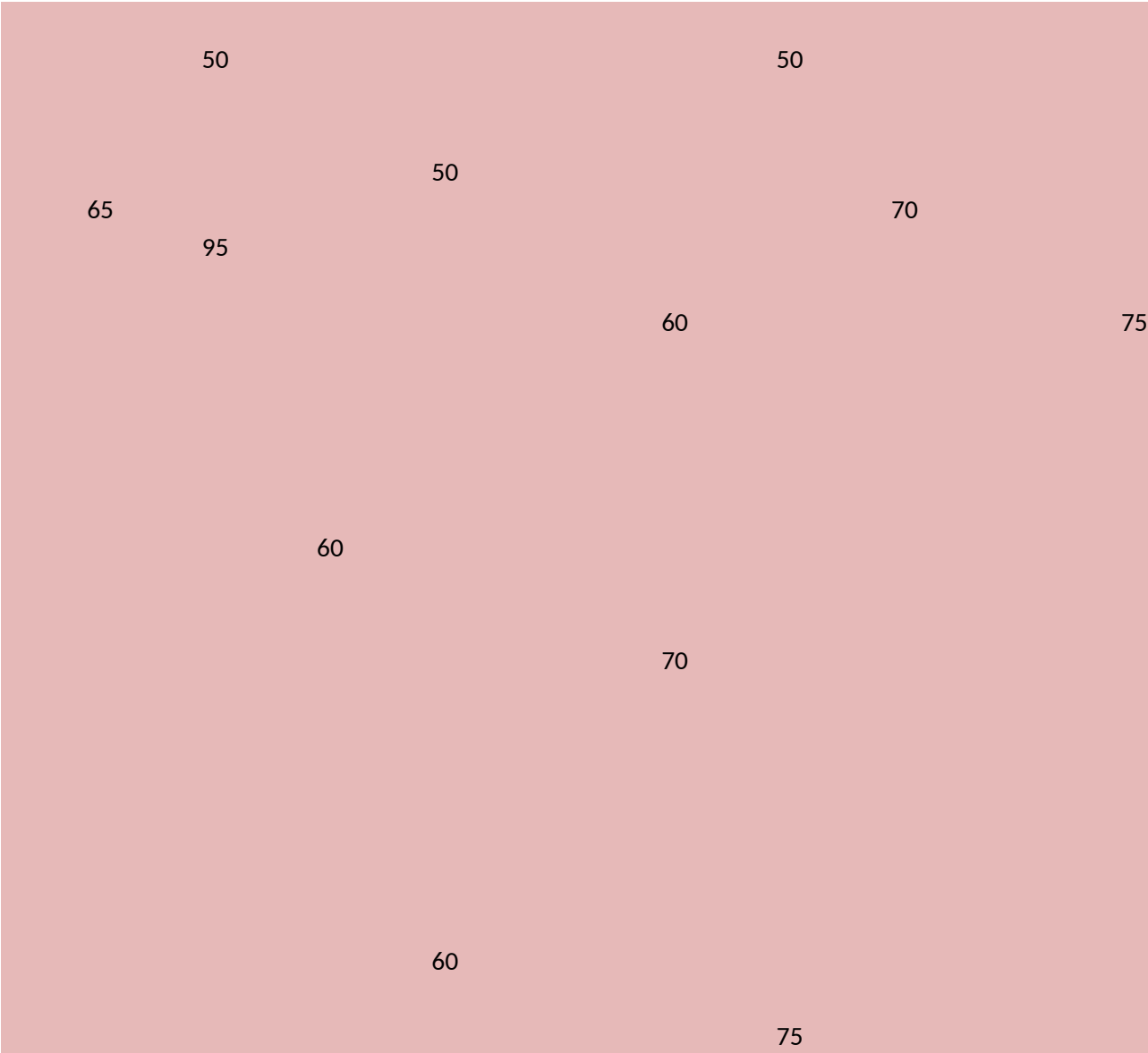
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75 60.90909 70.38462 58.92857 63.33333 65.90909 58 63 70.83333 72.5



Fc5_Mb3 Fc5_Mb6 Fb5_Mc4 Fb5_Mc5 Fb5_Mc9 Fb5_Mb2 Fb5_Mb7 Fb5_Mb11Fc6_Mc1 Fc6_Mc5

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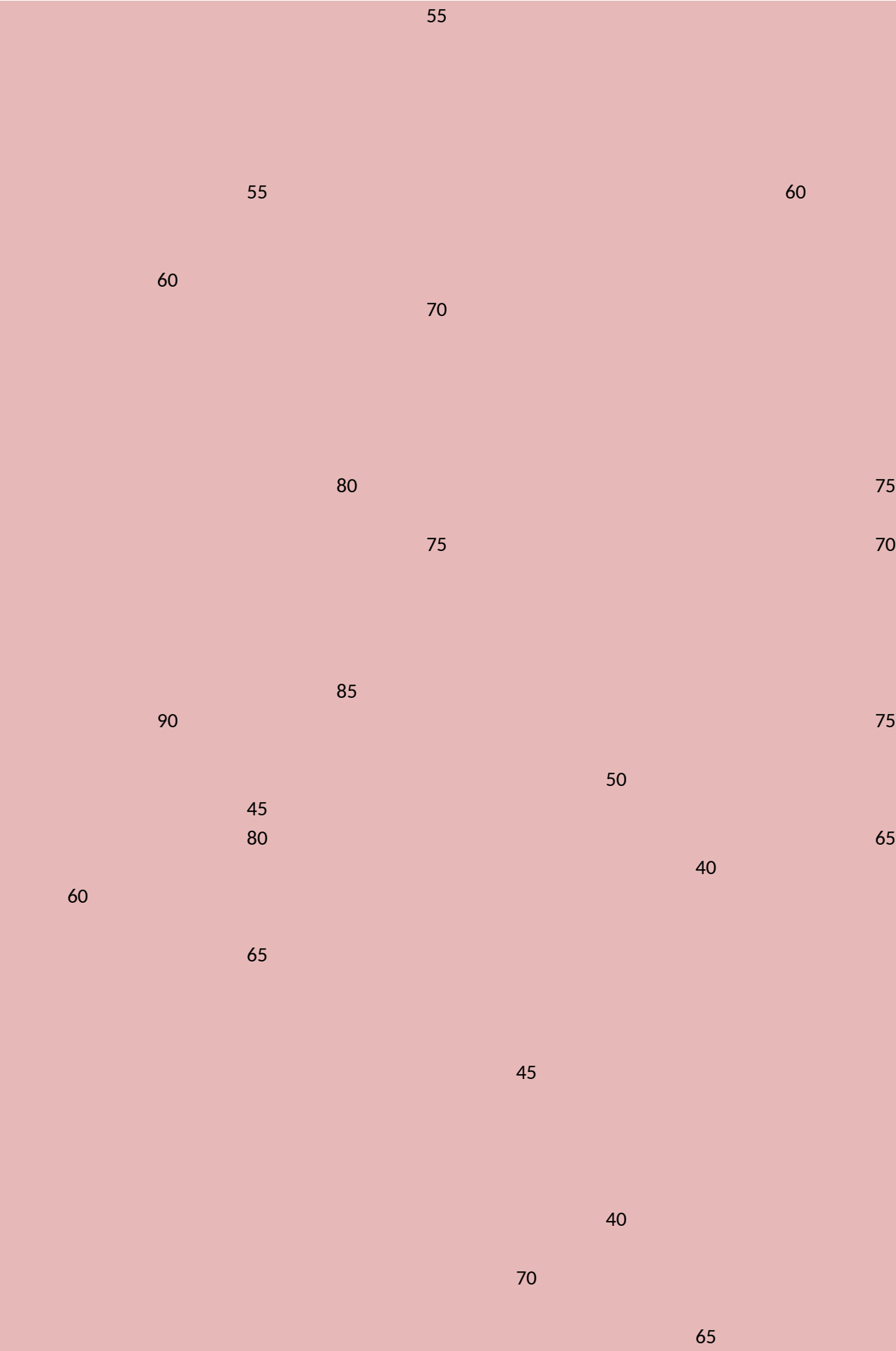
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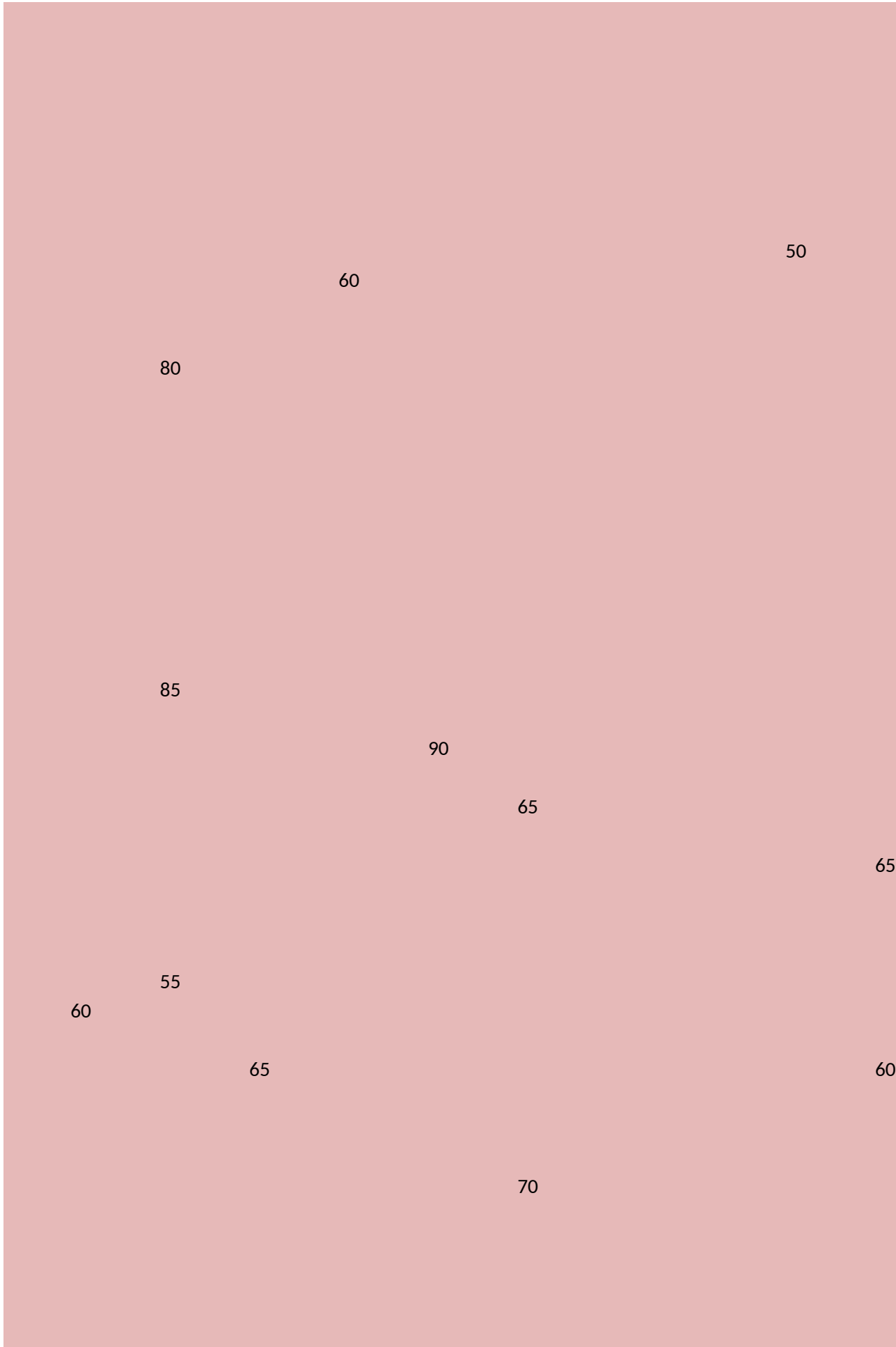
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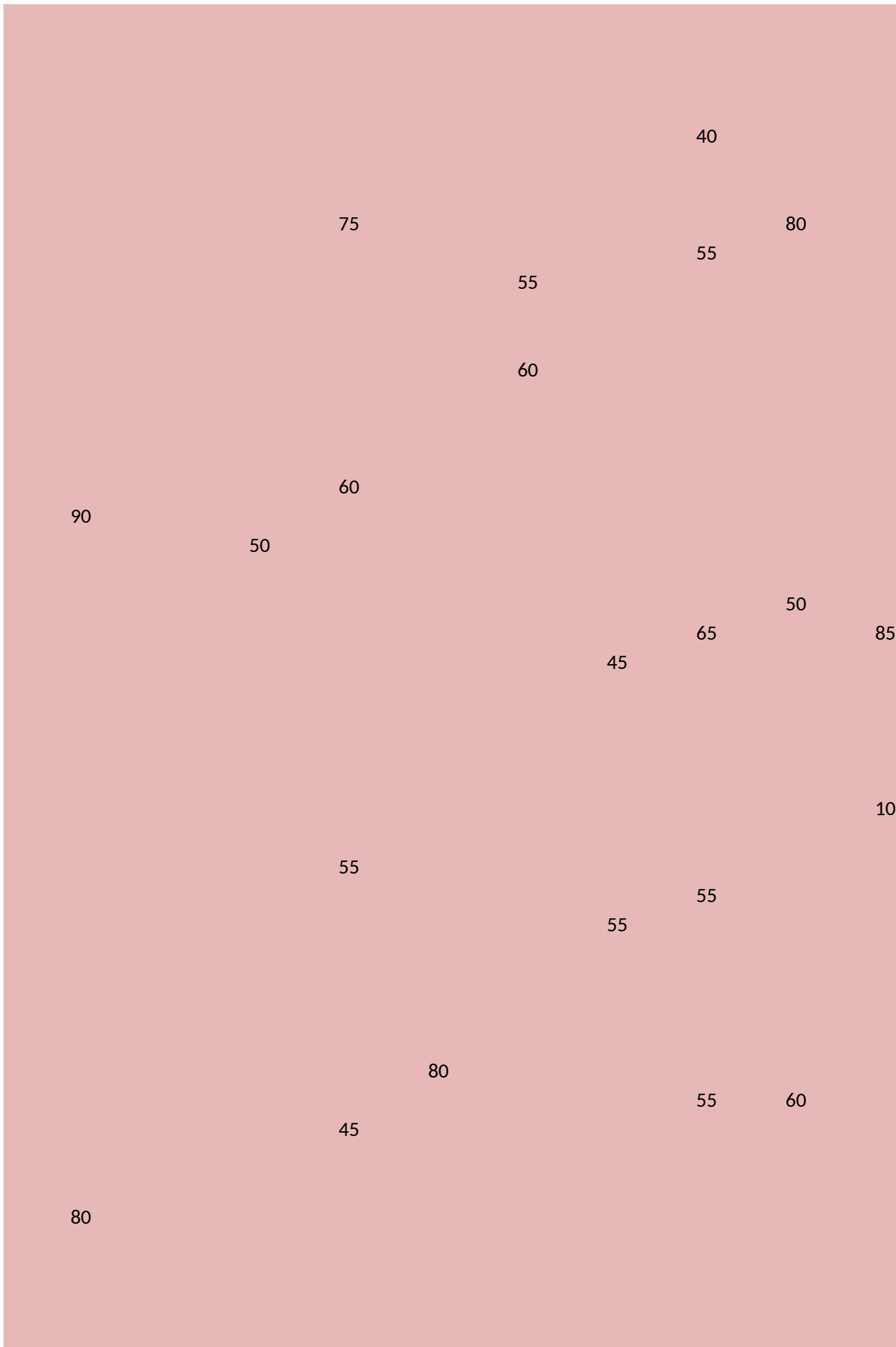
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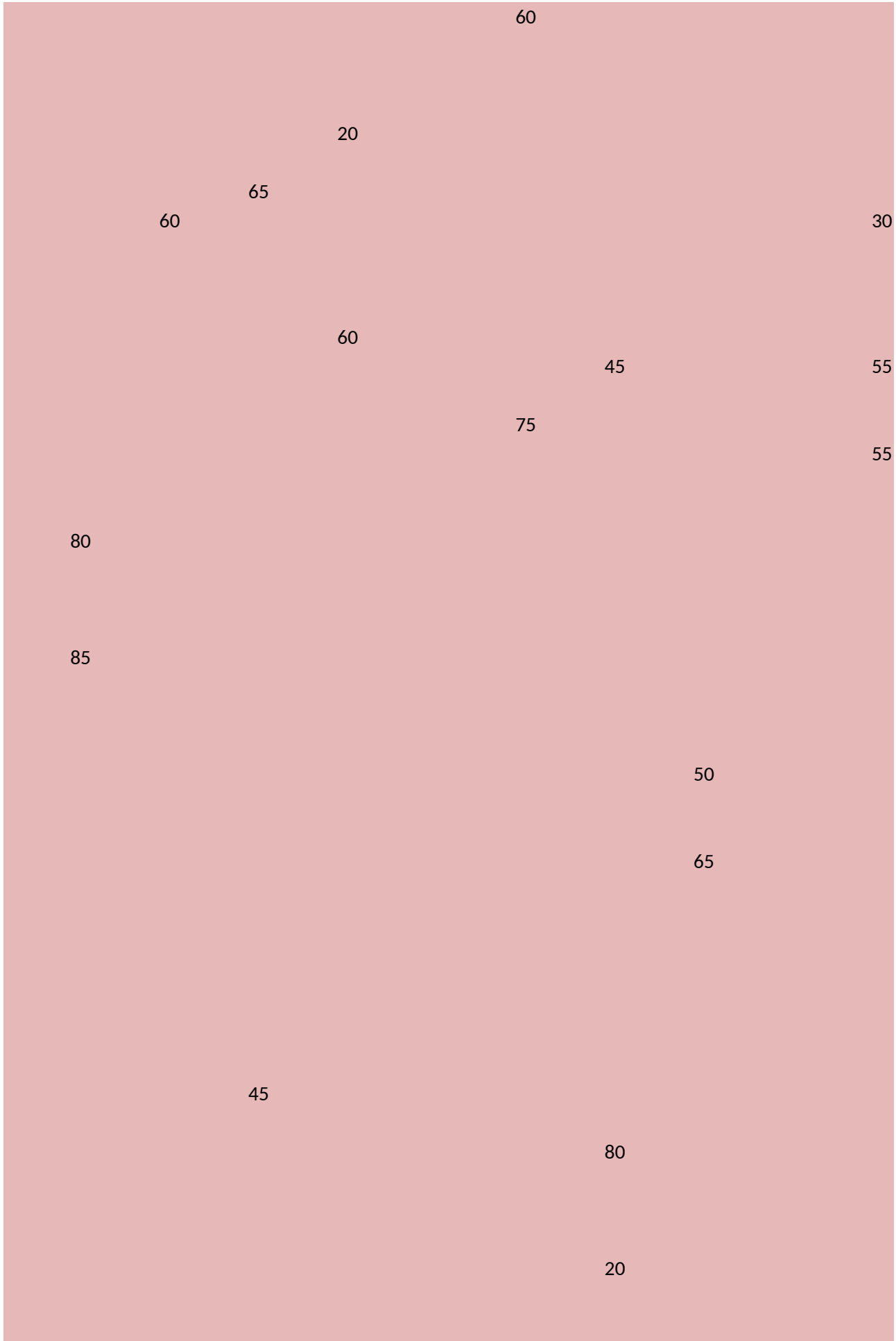
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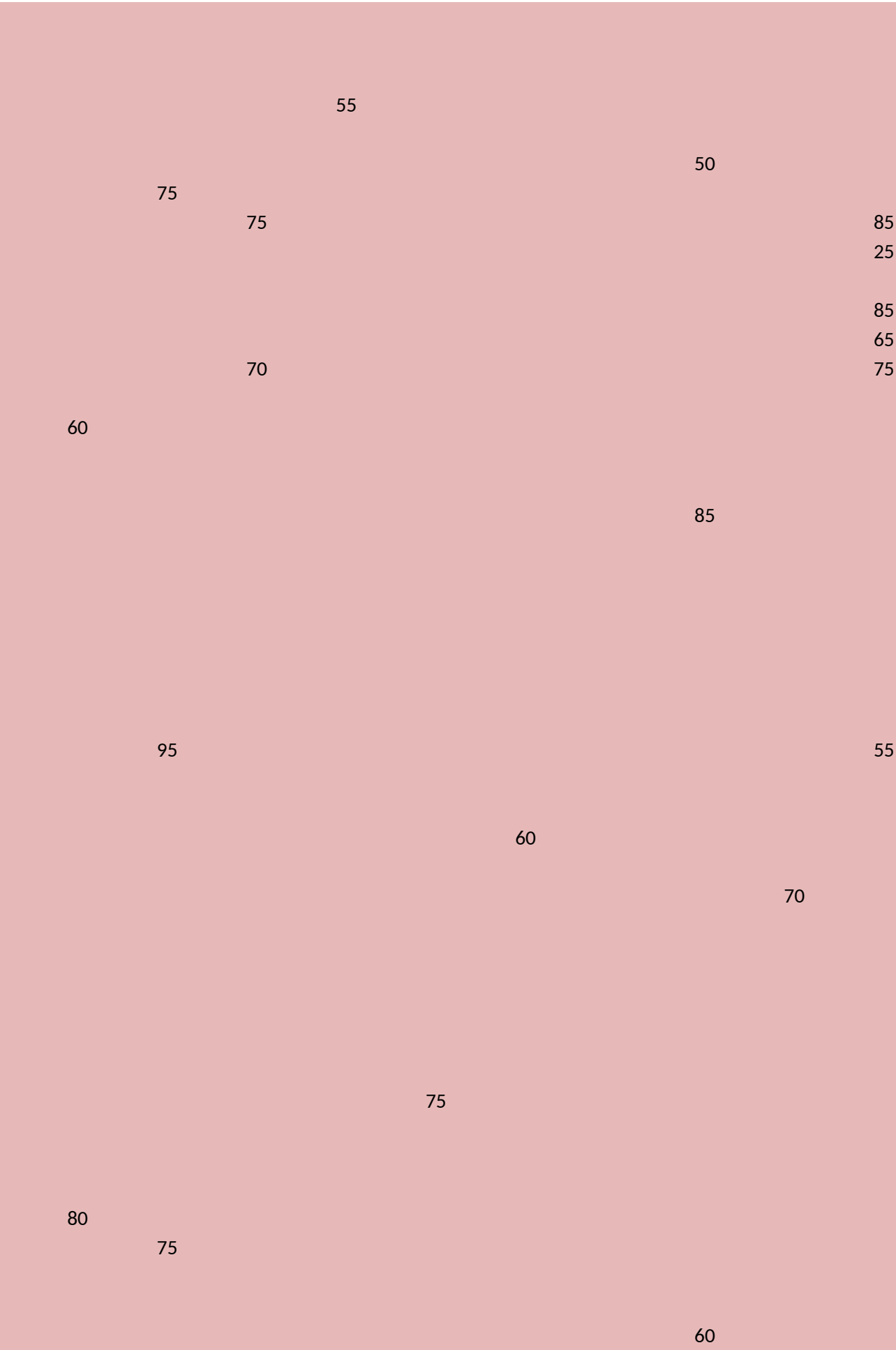
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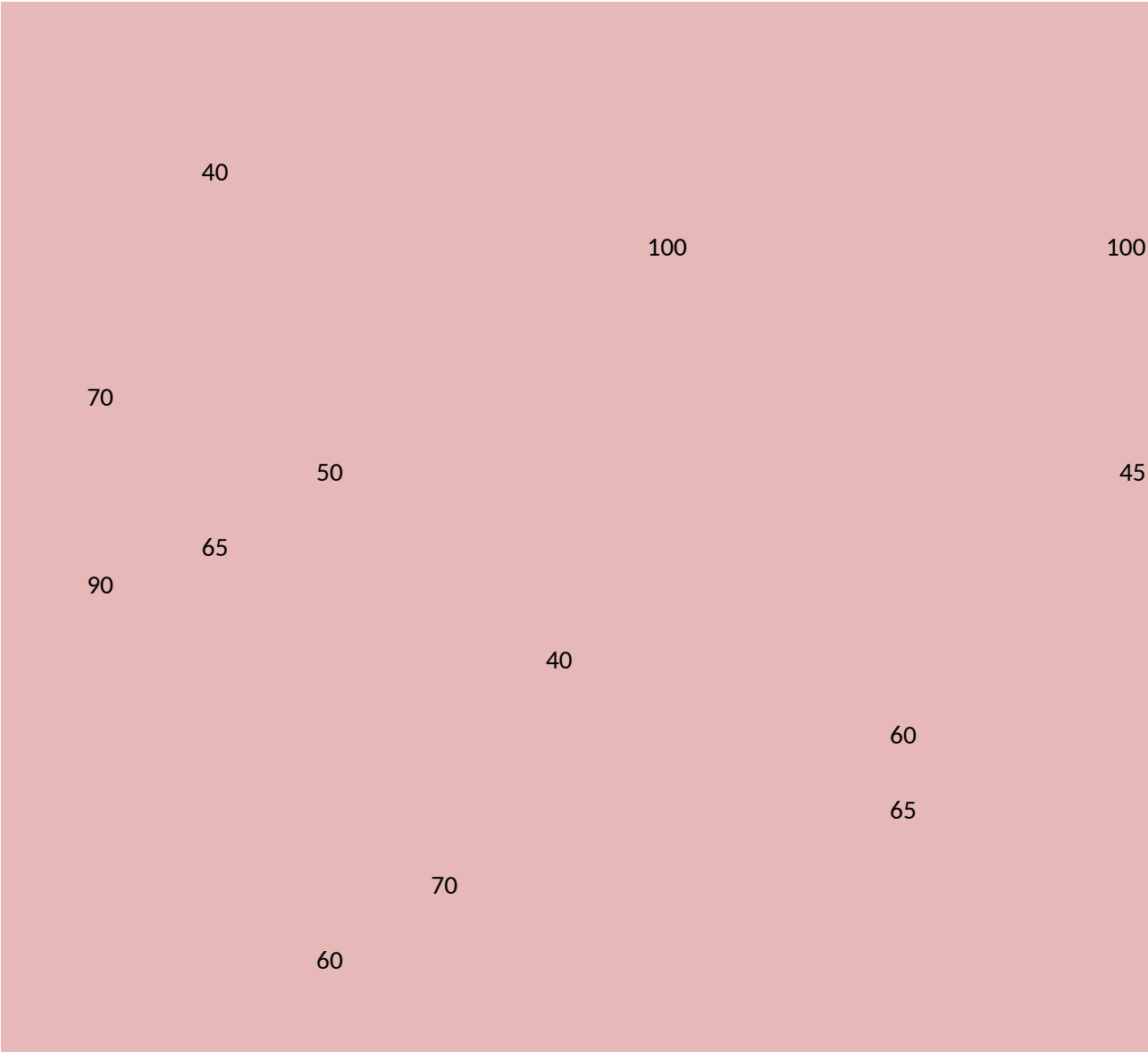












70.83333 70.90909 59.28571 55.76923 69.28571 64.61538 51.81818 57.85714 63.57143 61.42857



Fc6_Mc6 Fc6_Mb2 Fc6_Mb8 Fc6_Mb9 Fb6_Mc3 Fb6_Mc11Fb6_Mc12Fb6_Mb4 Fb6_Mb7 Fb6_Mb10

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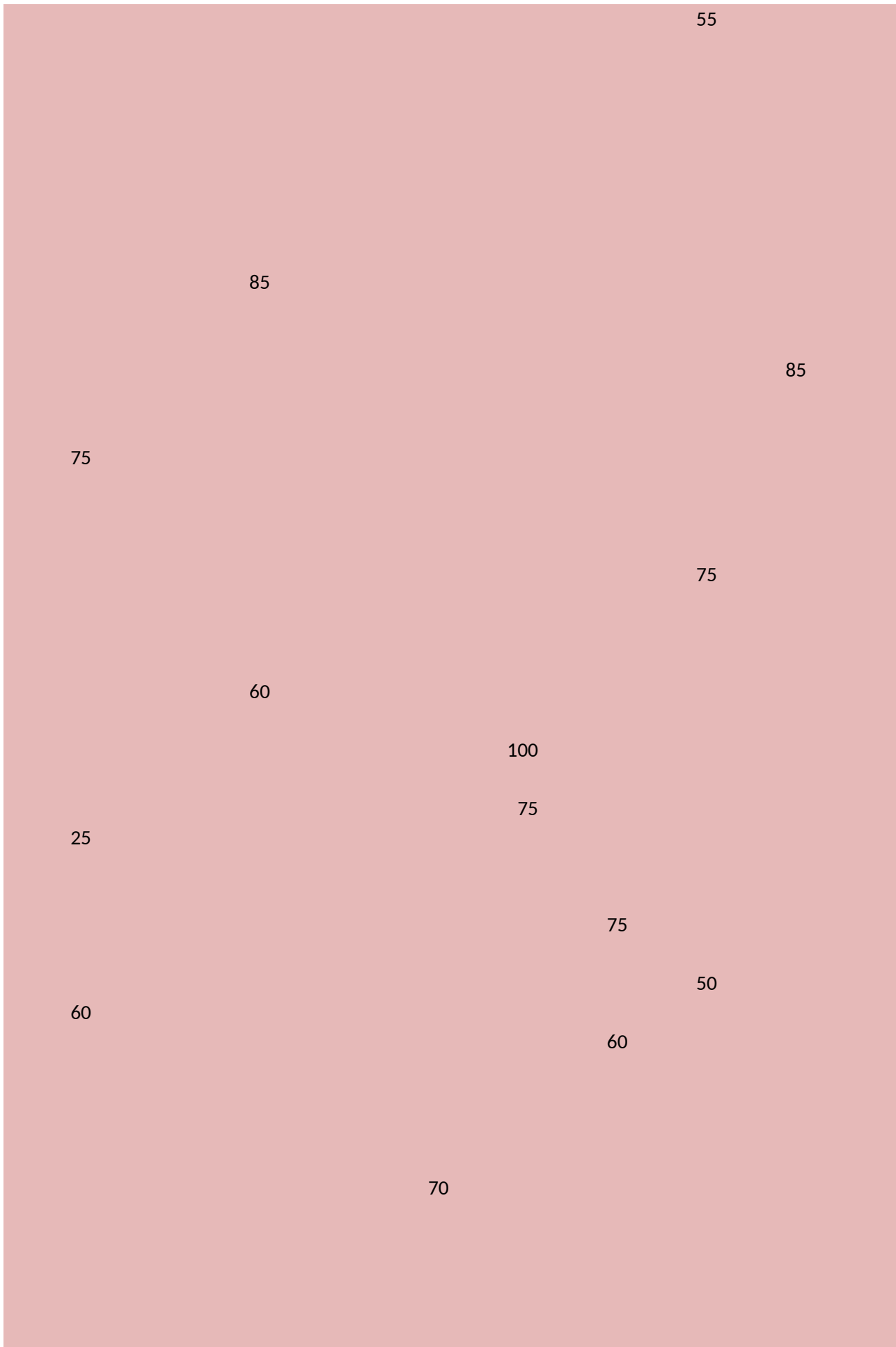
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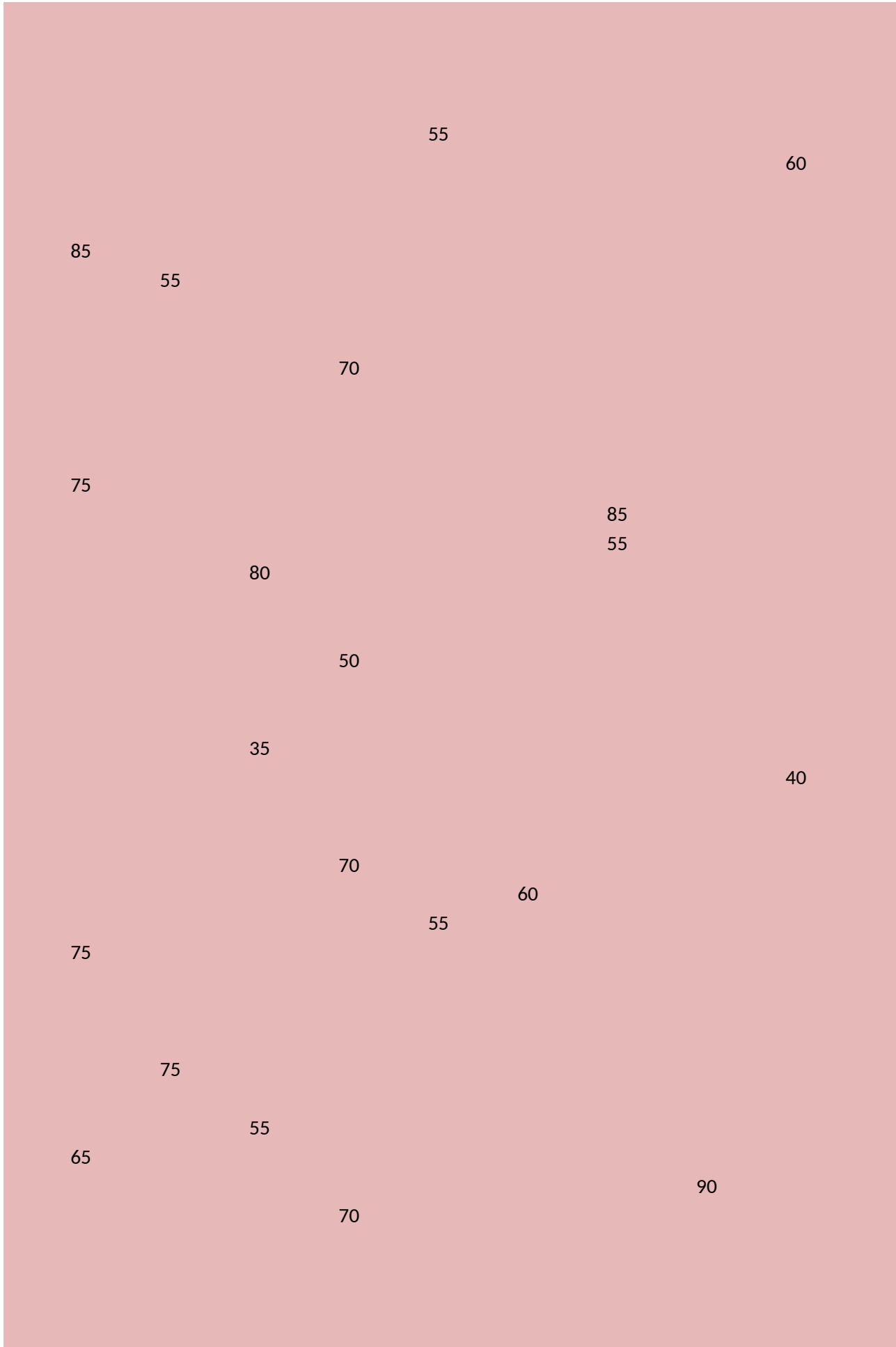
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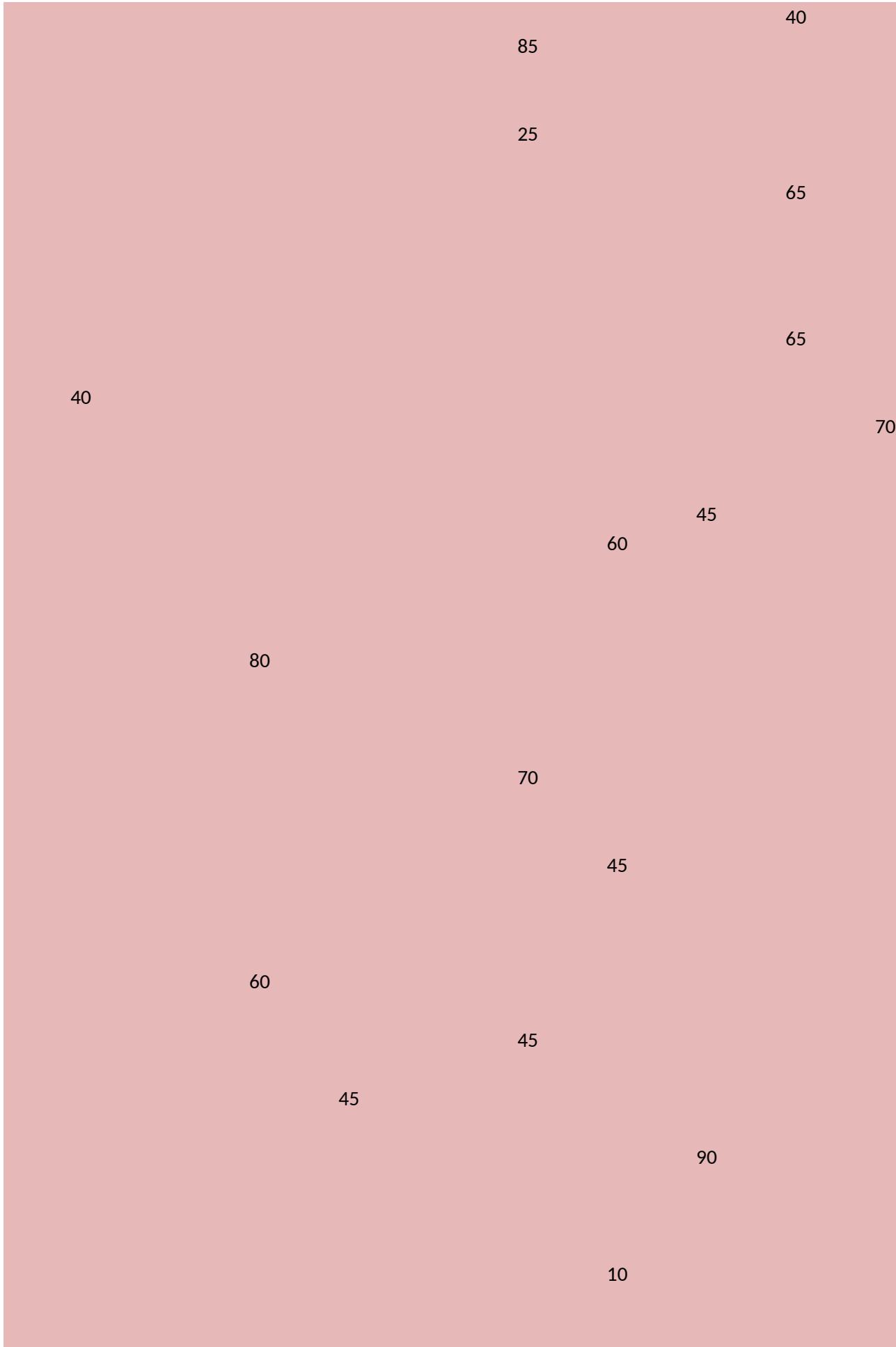
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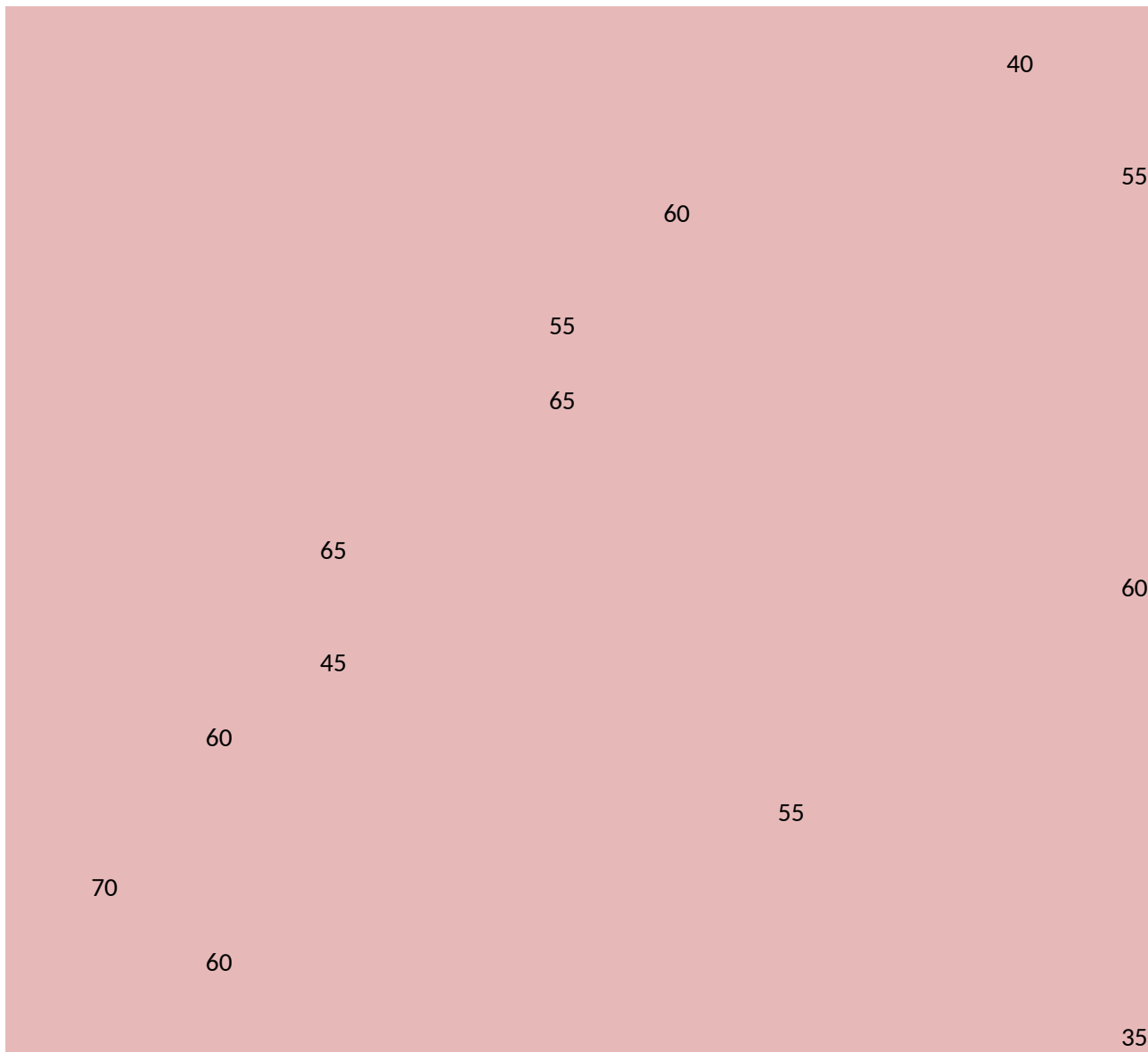
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62.14286 61.25 57.14286 56.25 58.75 65.3125 58.5 62.5 53.07692 62.91667



Fc7_Mc7 Fc7_Mc9 Fc7_Mc12 Fc7_Mb4 Fc7_Mb10 Fc7_Mb11 Fb7_Mc3 Fb7_Mc5 Fb7_Mc6 Fb7_Mb1

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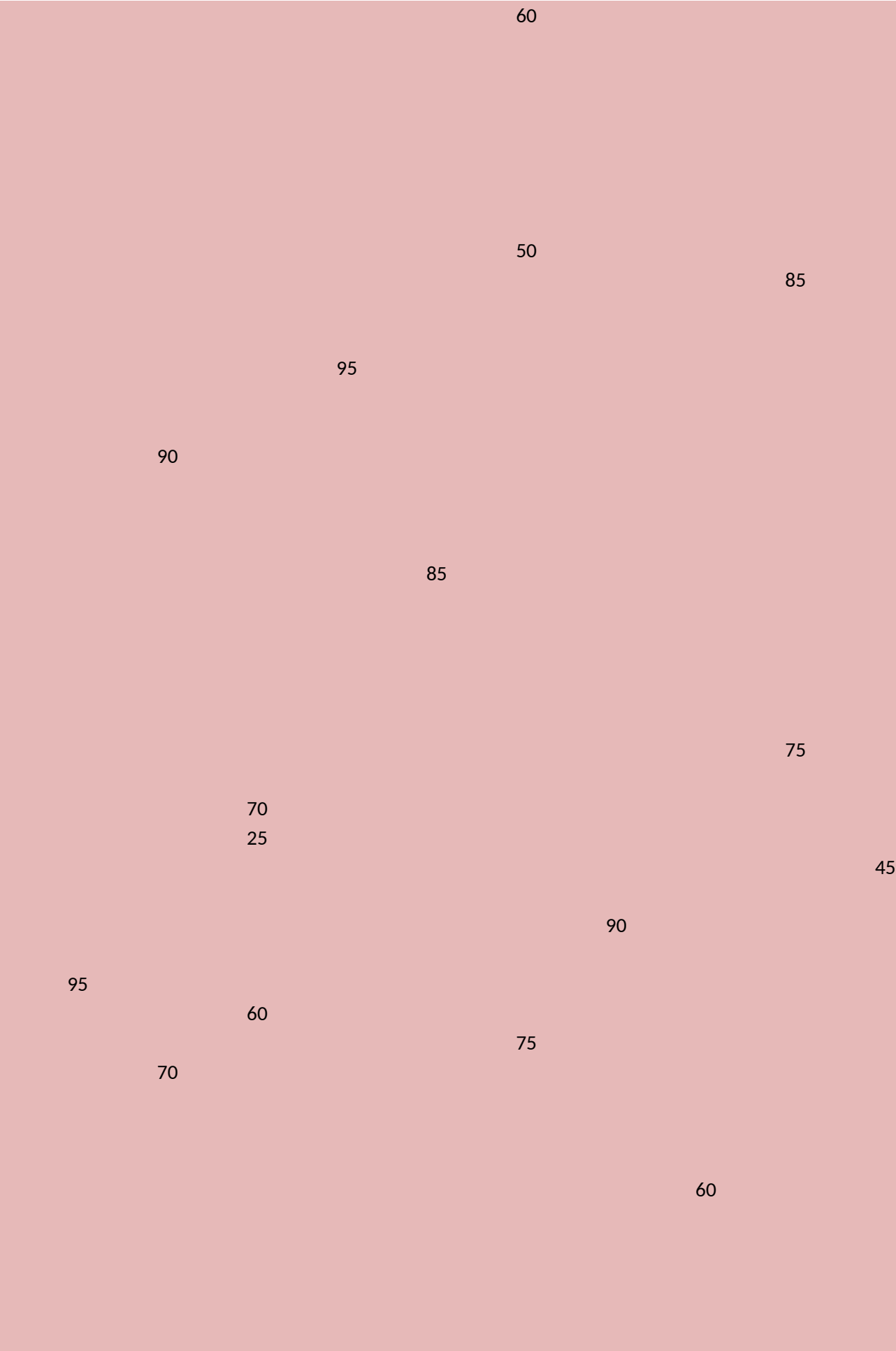
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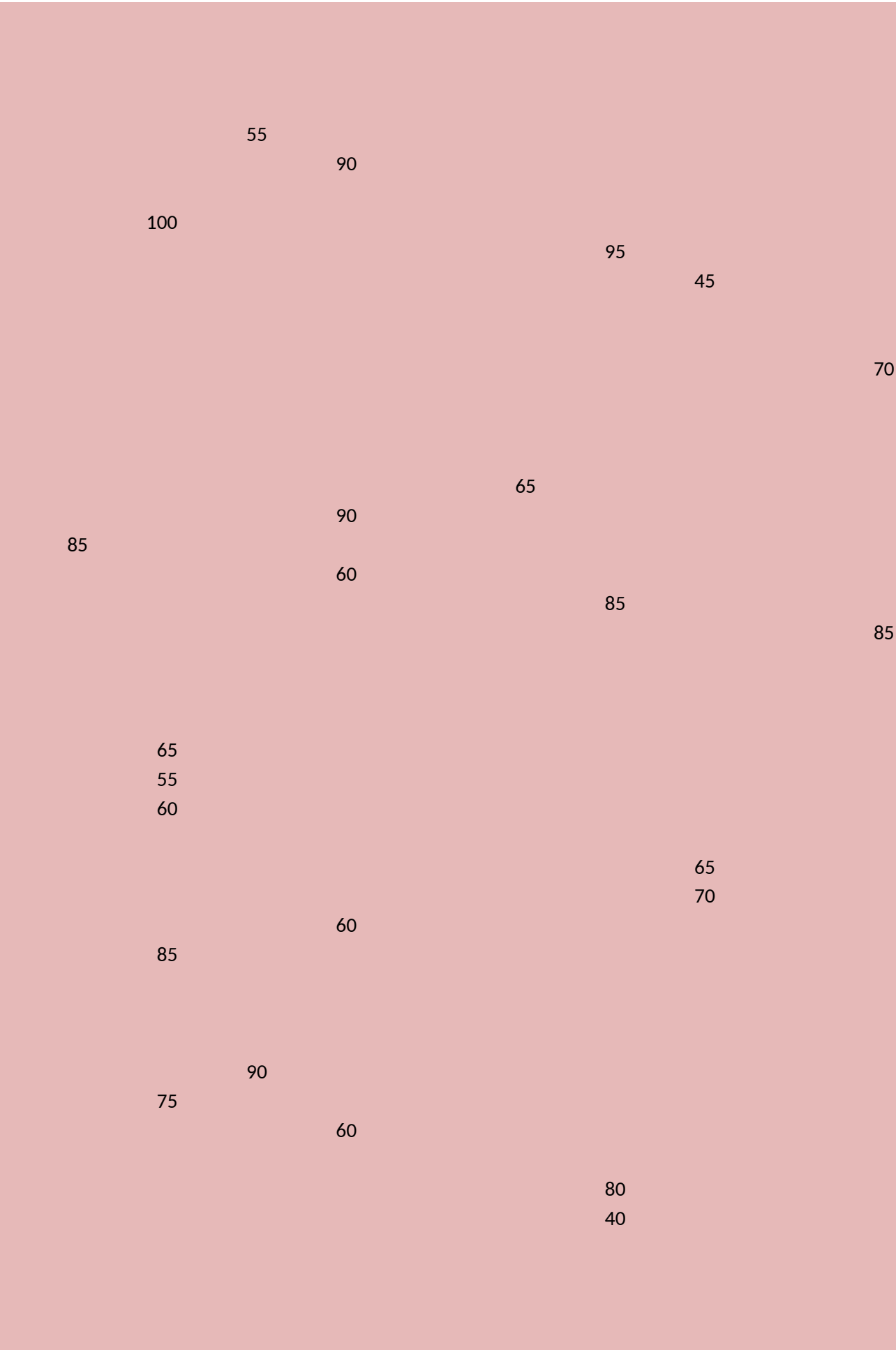
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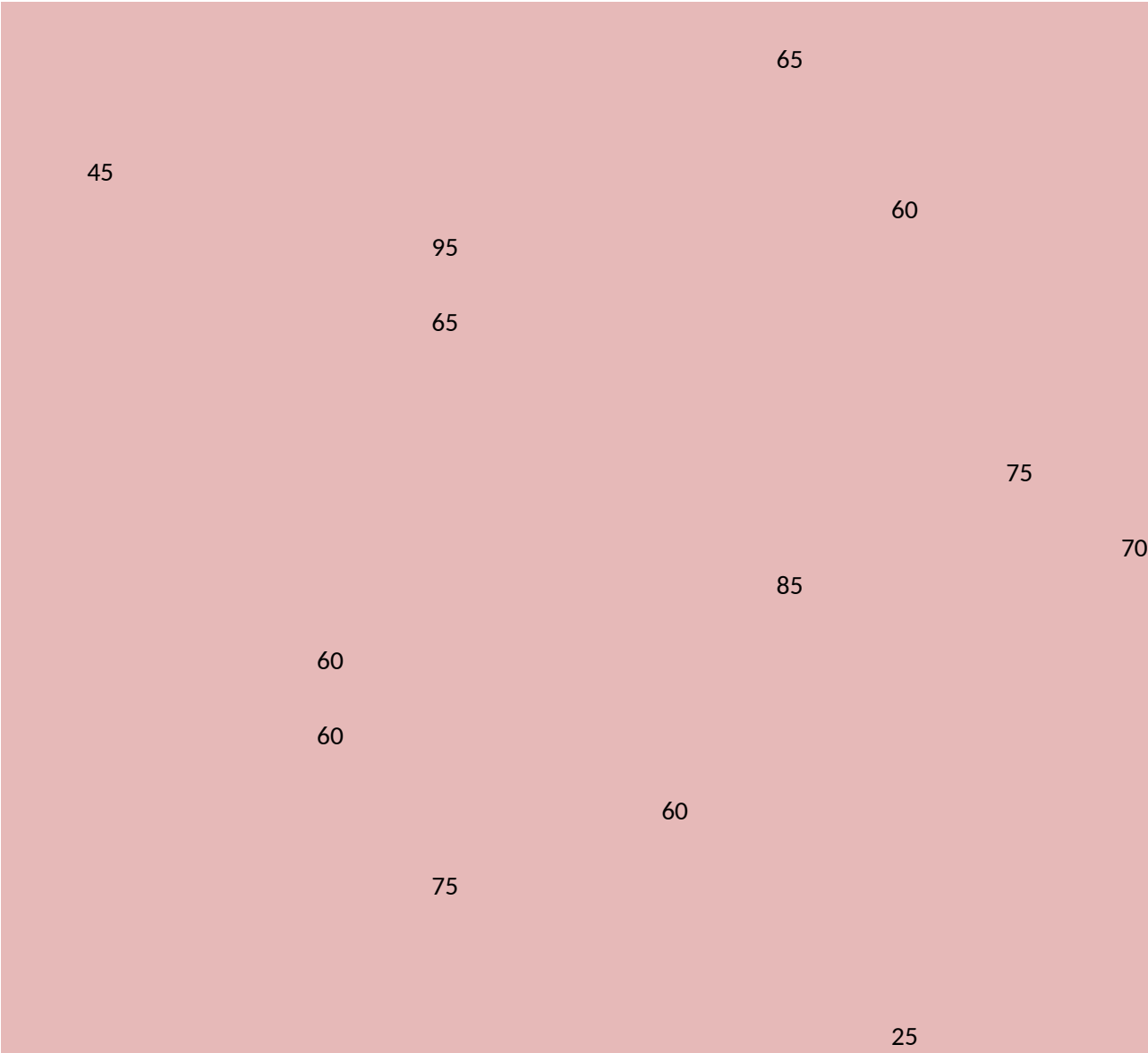
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65.55556 72.5 65.88235 69.375 77.5 65 66.5625 59.61538 57.5 69.54545



Fb7_Mb2 Fb7_Mb8 Fc8_Mc3 Fc8_Mc4 Fc8_Mc7 Fc8_Mb1 Fc8_Mb2 Fc8_Mb11Fb8_Mc8 Fb8_Mc5

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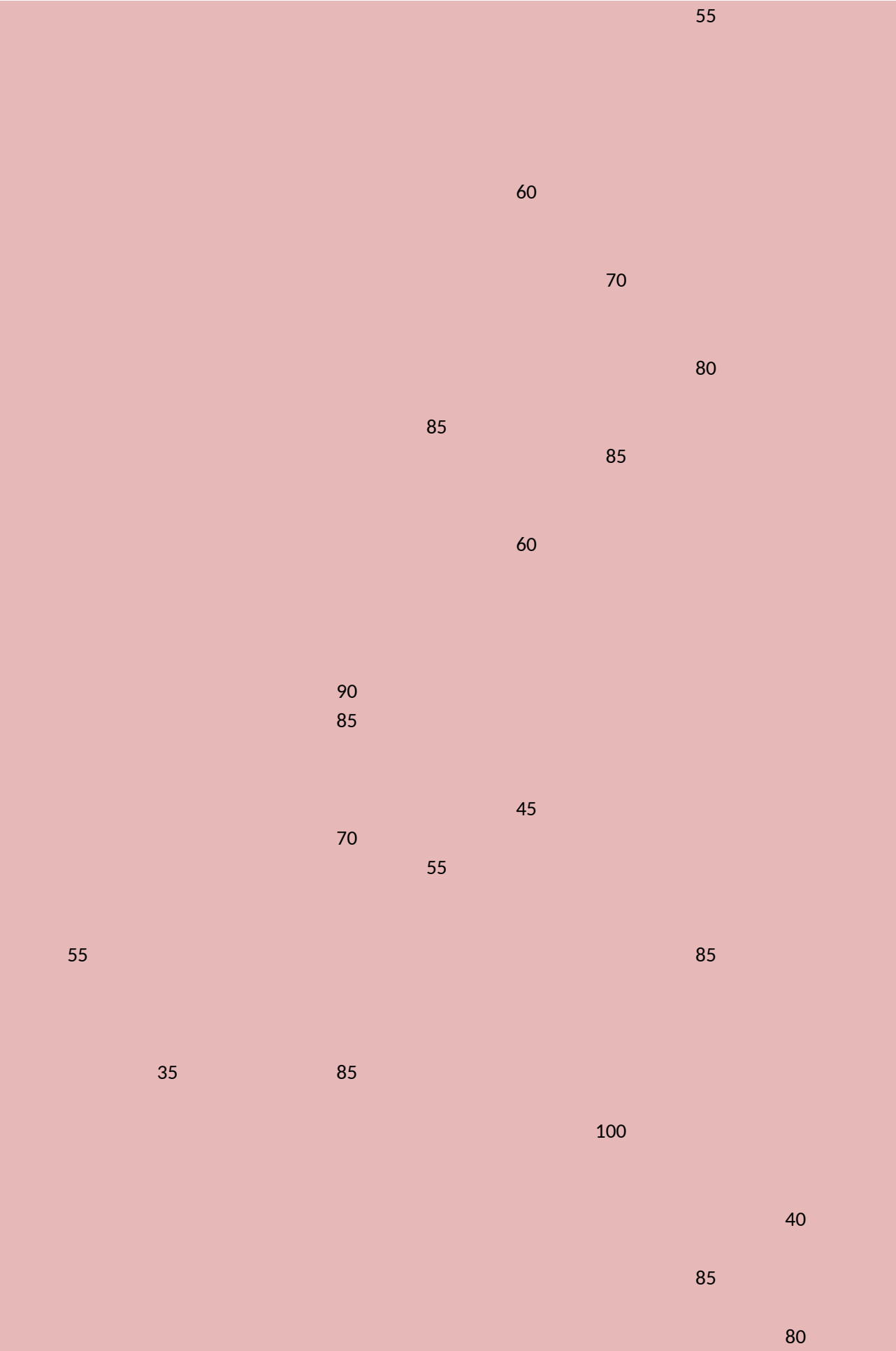
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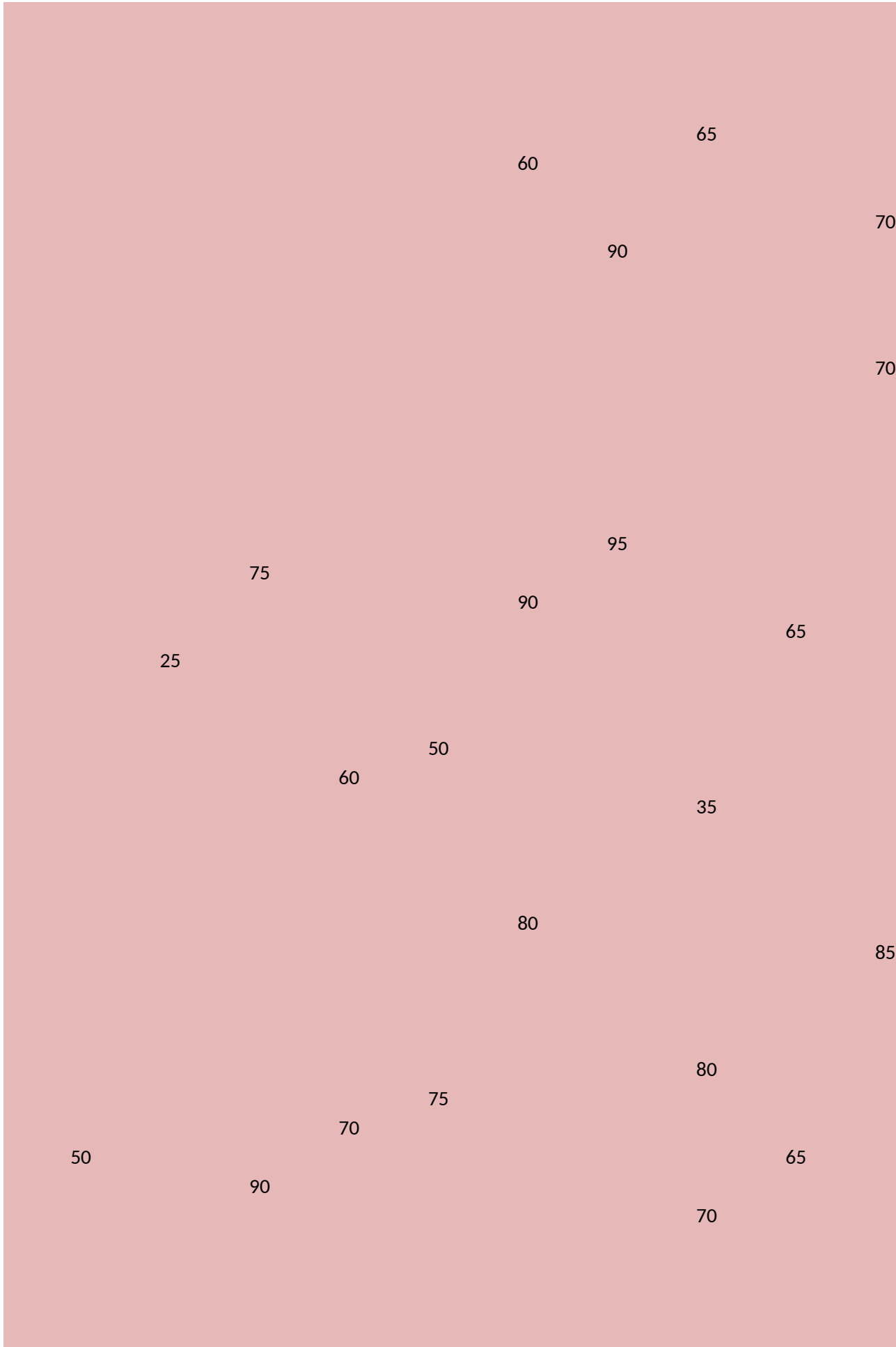
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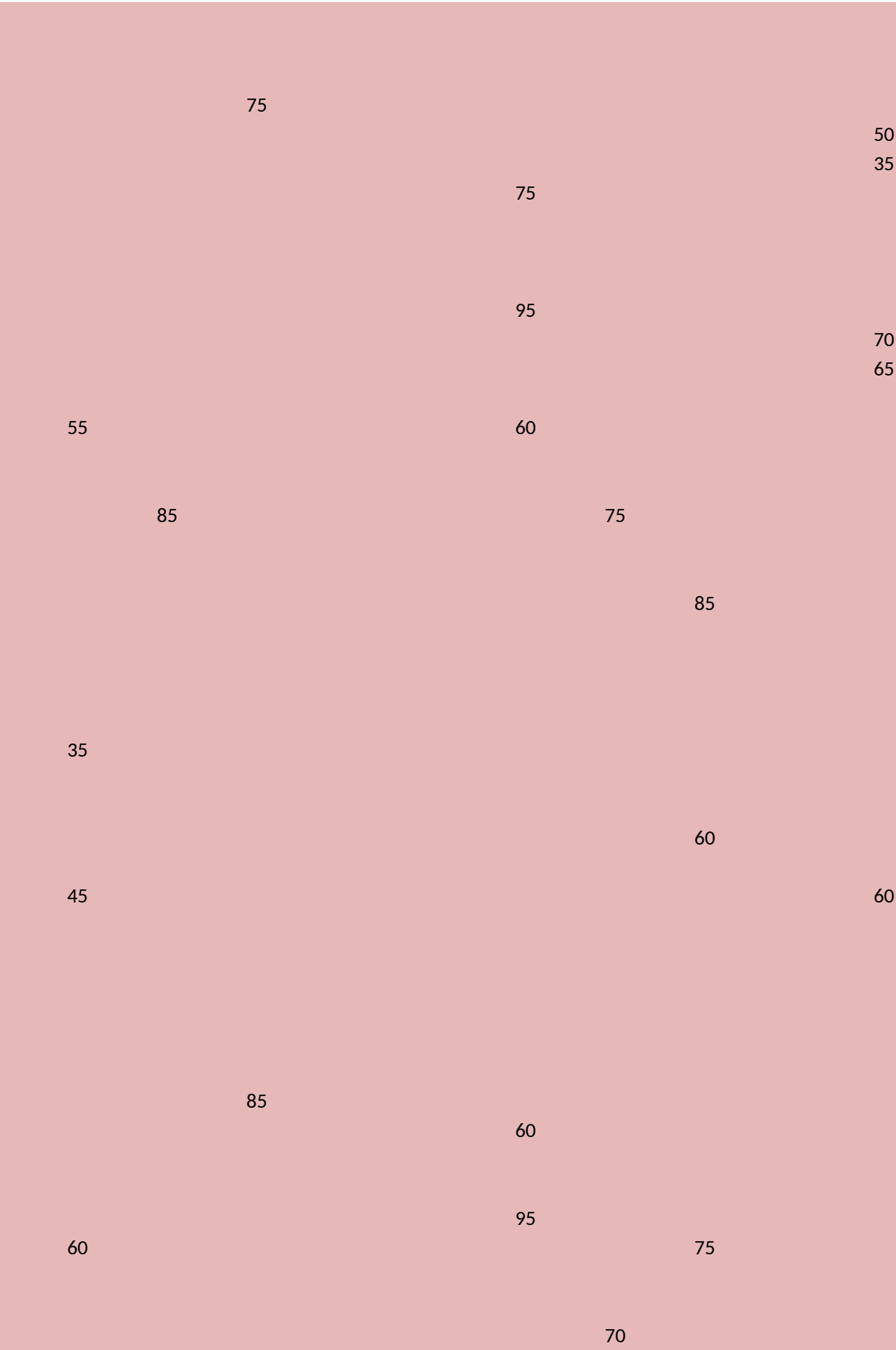
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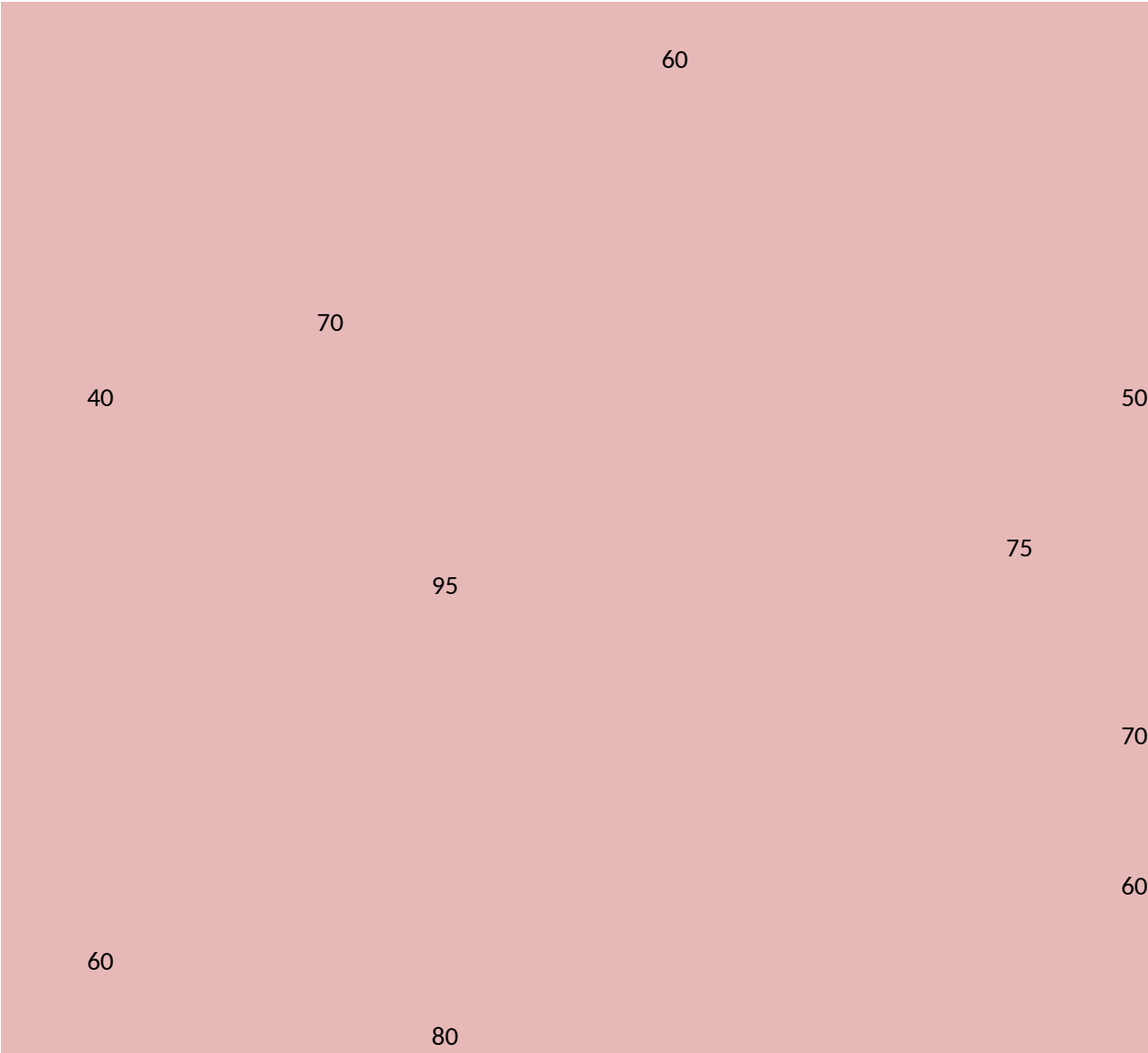
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47.5 46.66667 75.41667 76.53846 71.66667 69.41176 78.33333 70 61.25 63.46154



Fb8_Mc6 Fb8_Mb9 Fb8_Mb10Fb8_Mb12Fc9_Mc3 Fc9_Mc9 Fc9_Mc11Fc9_Mb2 Fc9_Mb5 Fc9_Mb7

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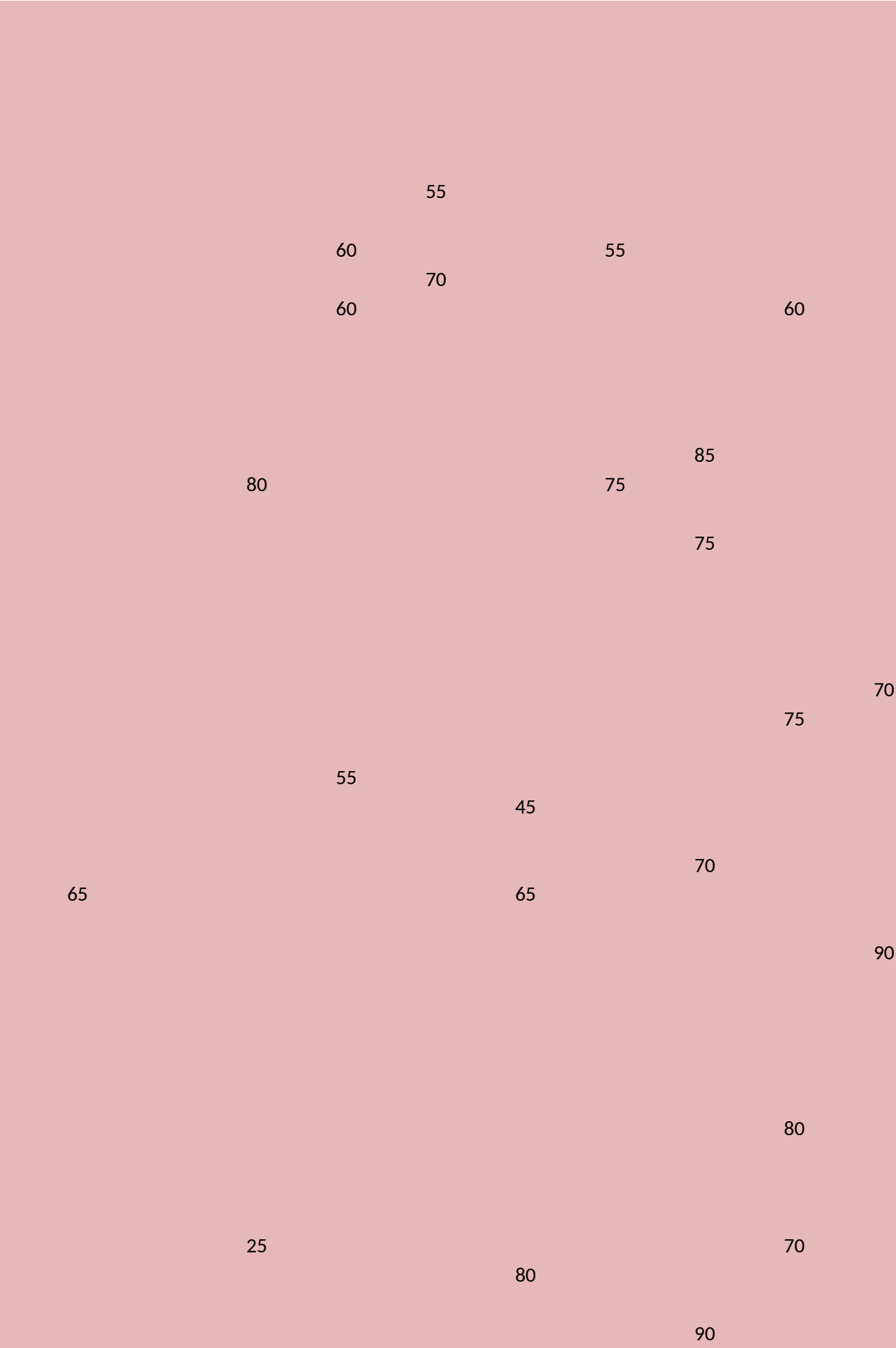
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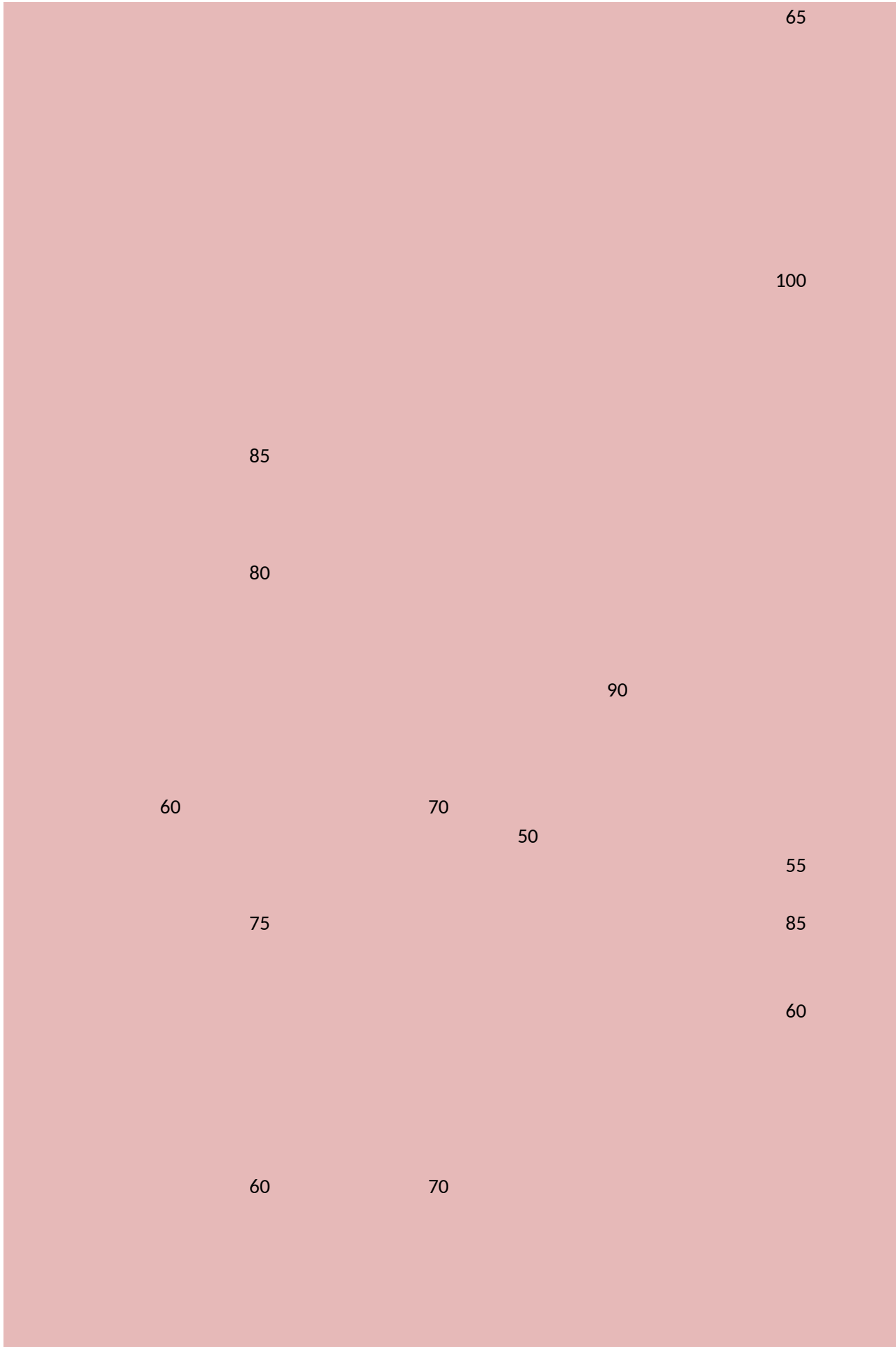
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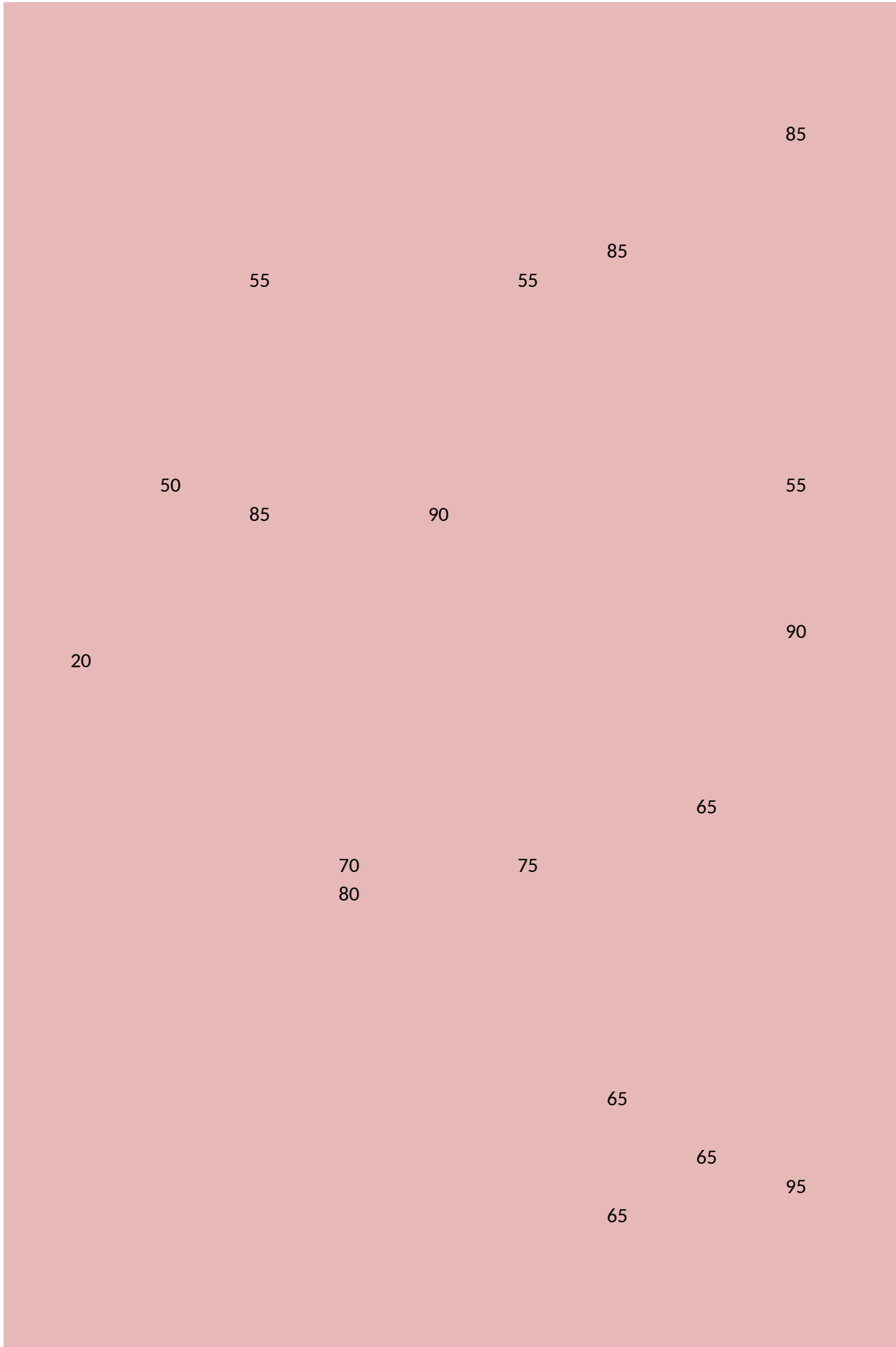
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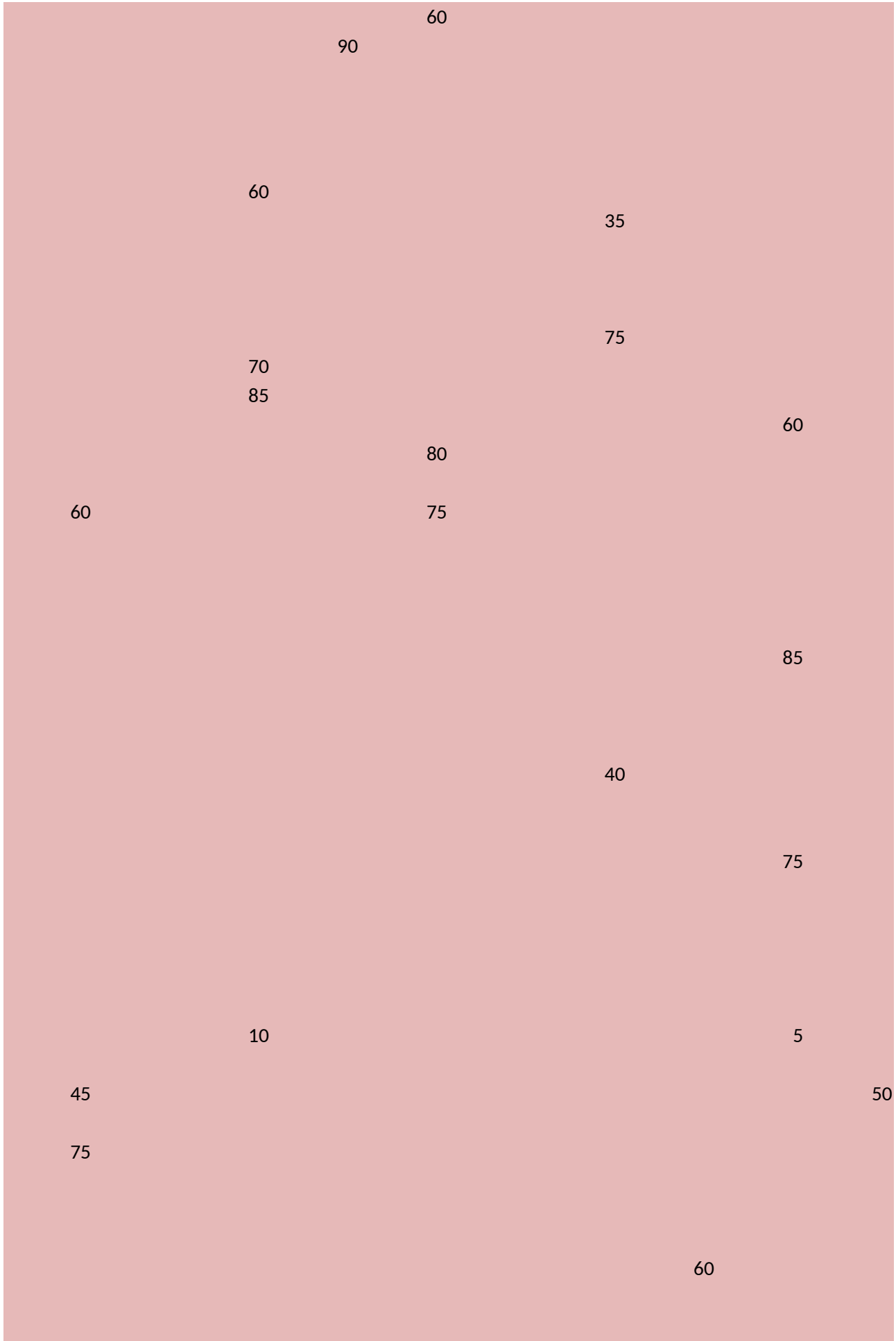
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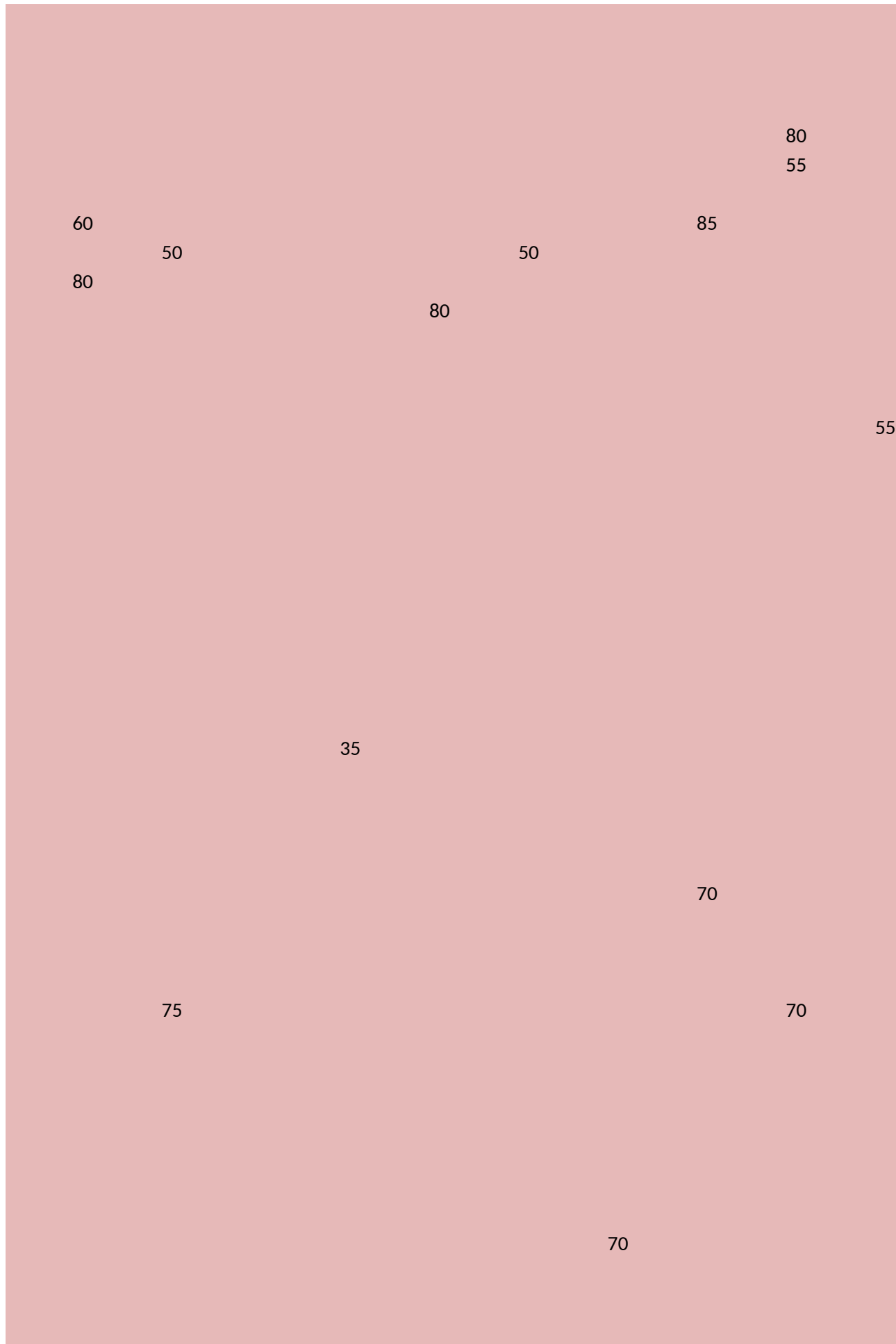
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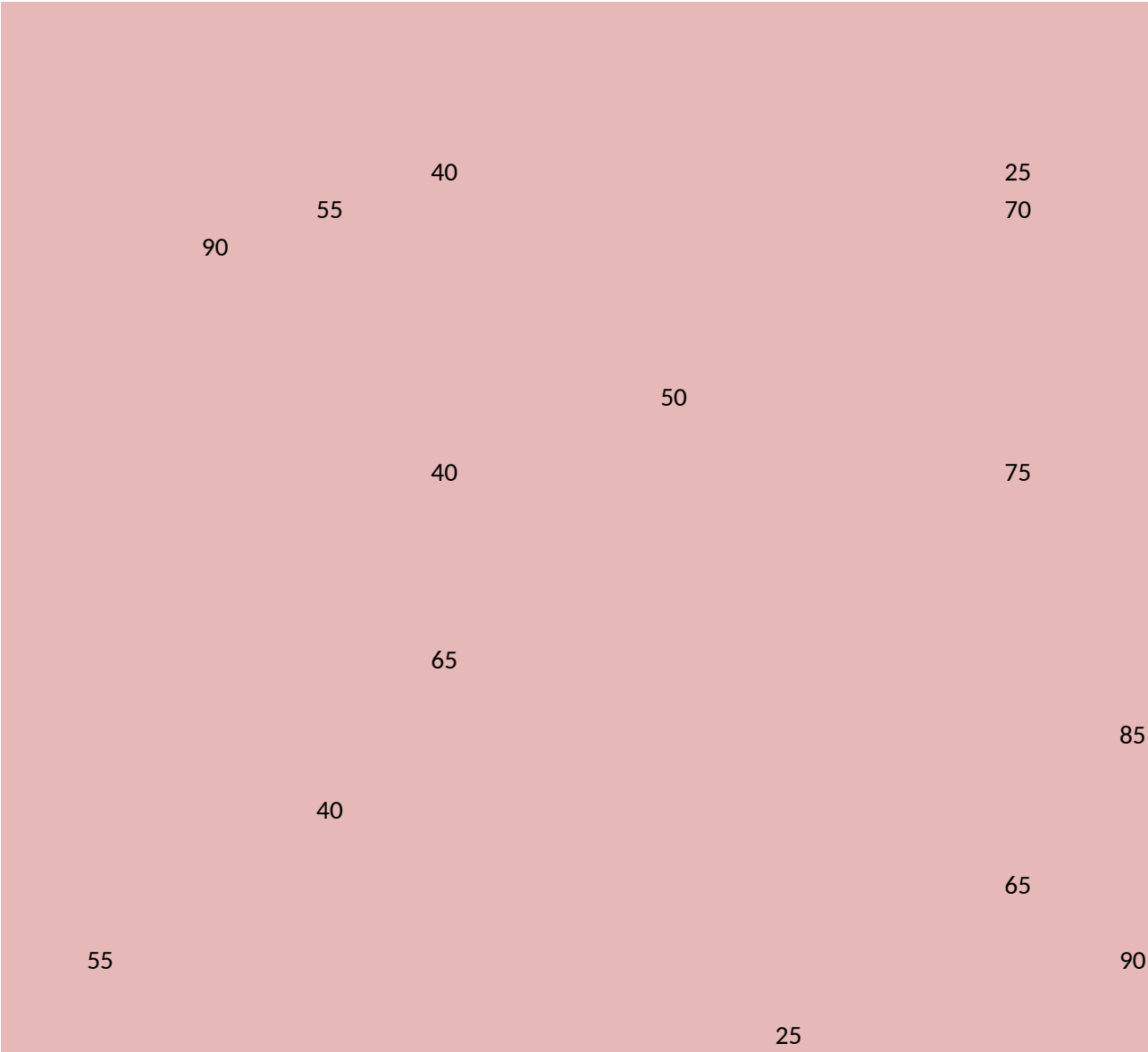












53.18182 60 60.33333 60 72.22222 60 63.07692 74.5 68.2 72.5



Fb9_Mc1 Fb9_Mc4 Fb9_Mc8 Fb9_Mb6 Fb9_Mb10Fb9_Mb12Fc10_Mc2 Fc10_Mc3 Fc10_Mc1:Fc10_Mb4

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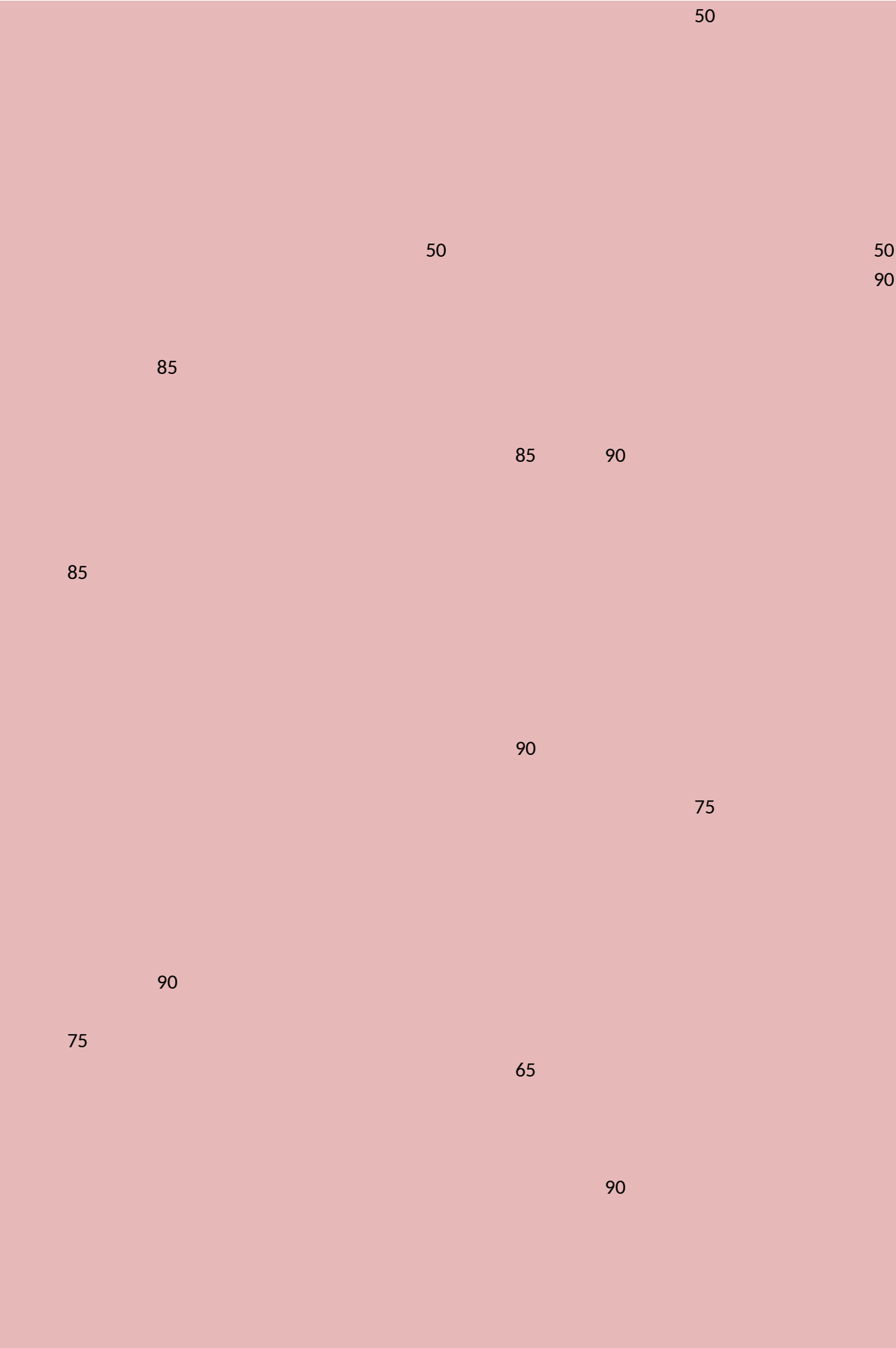
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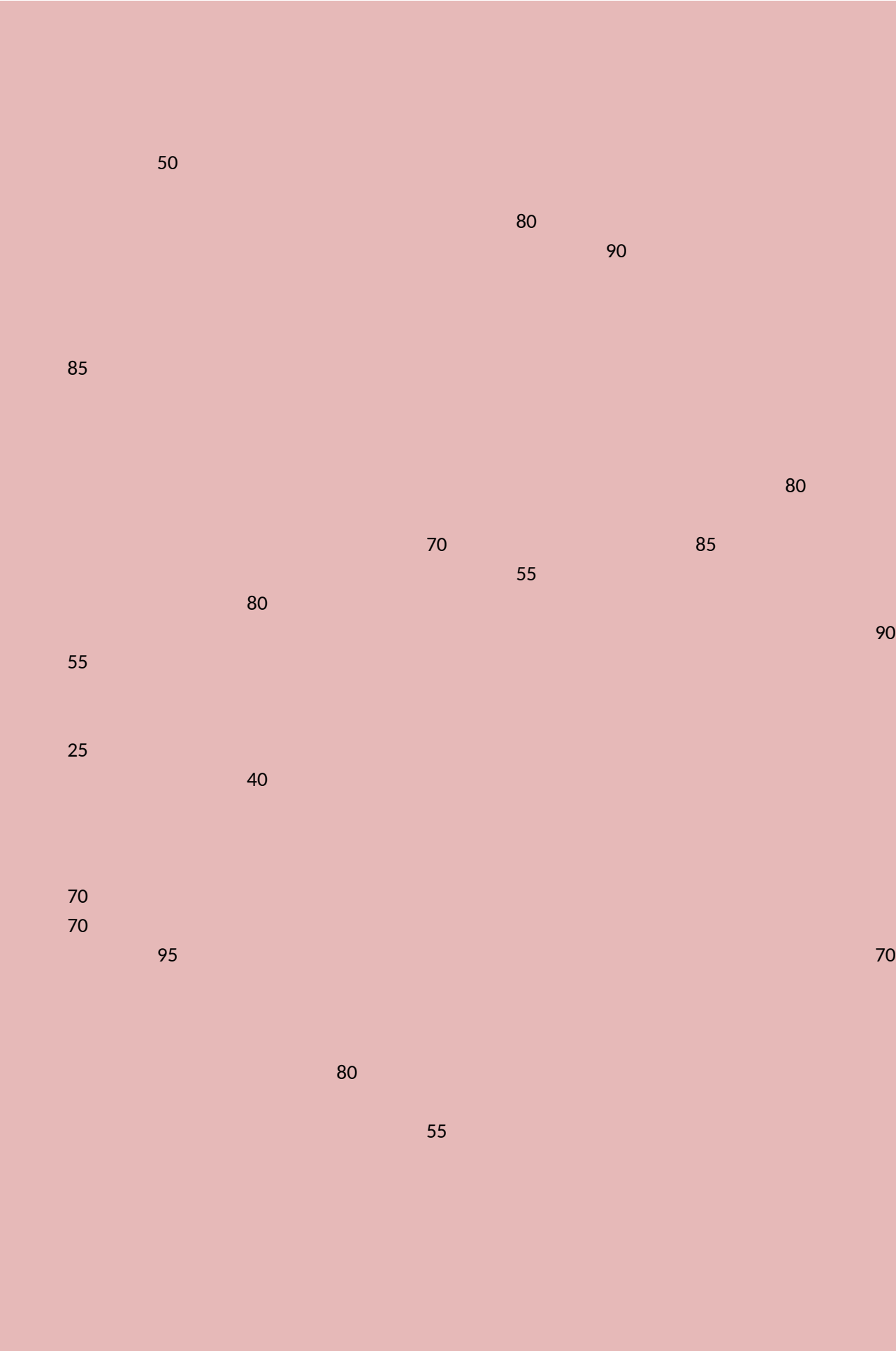
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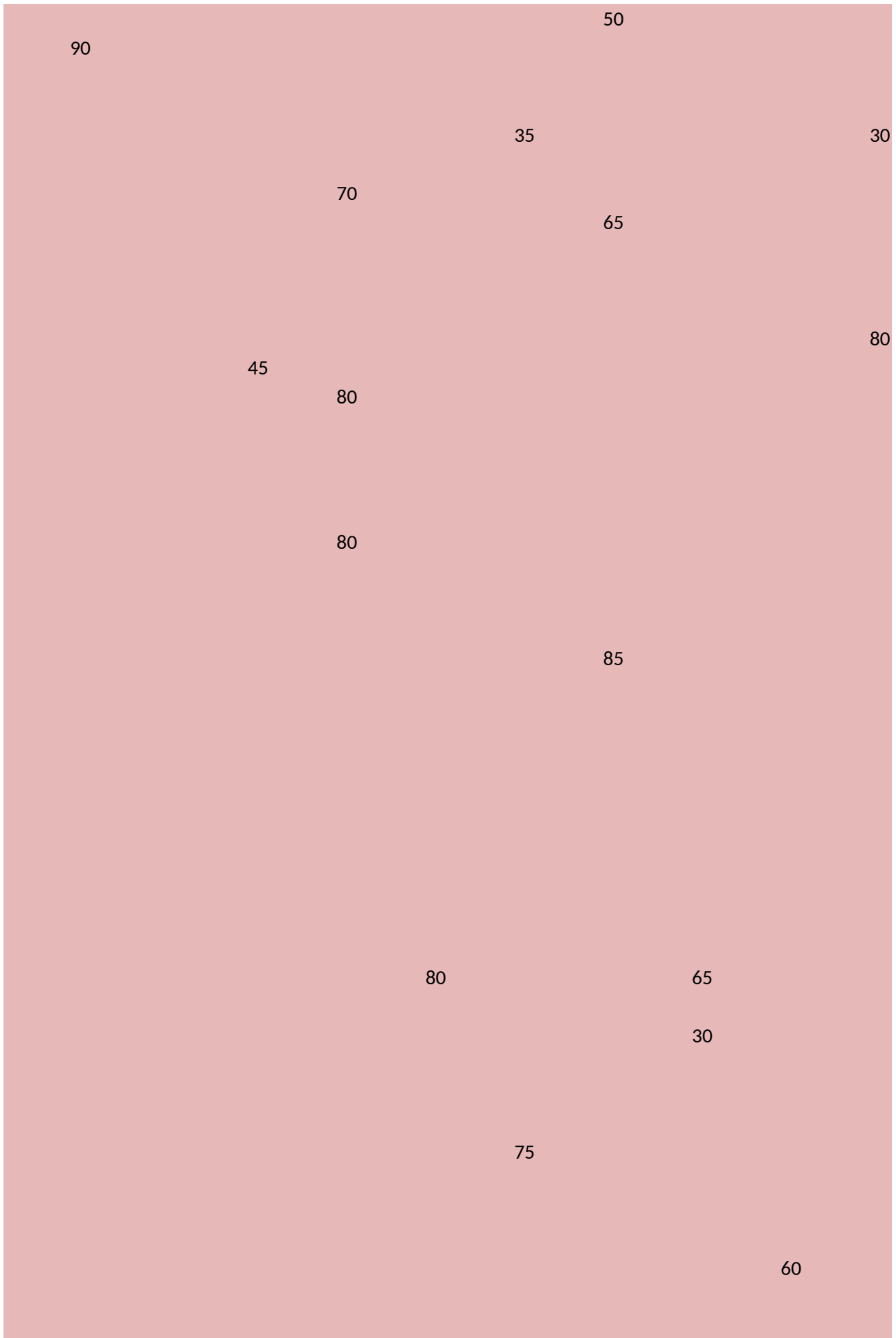
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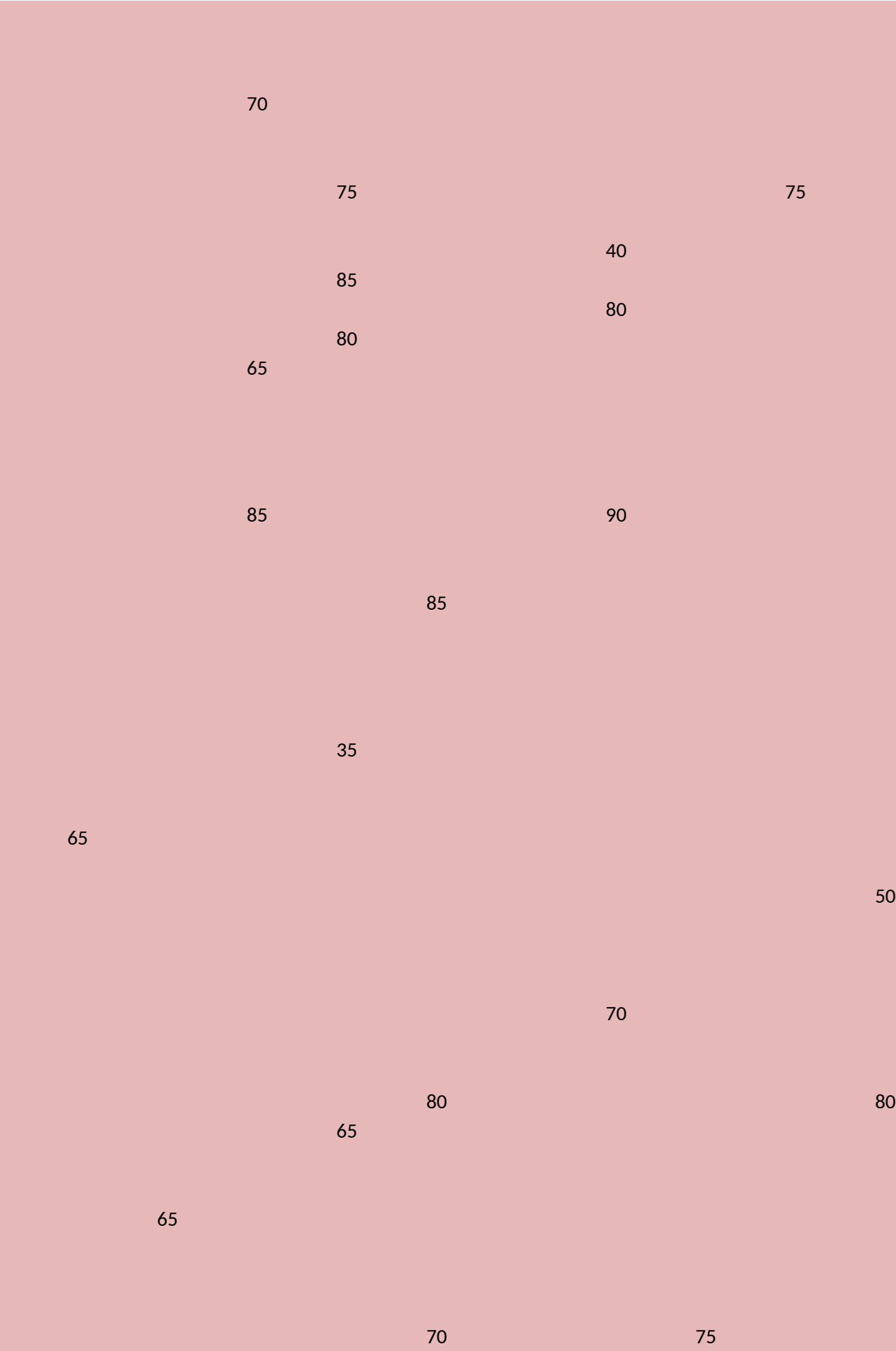
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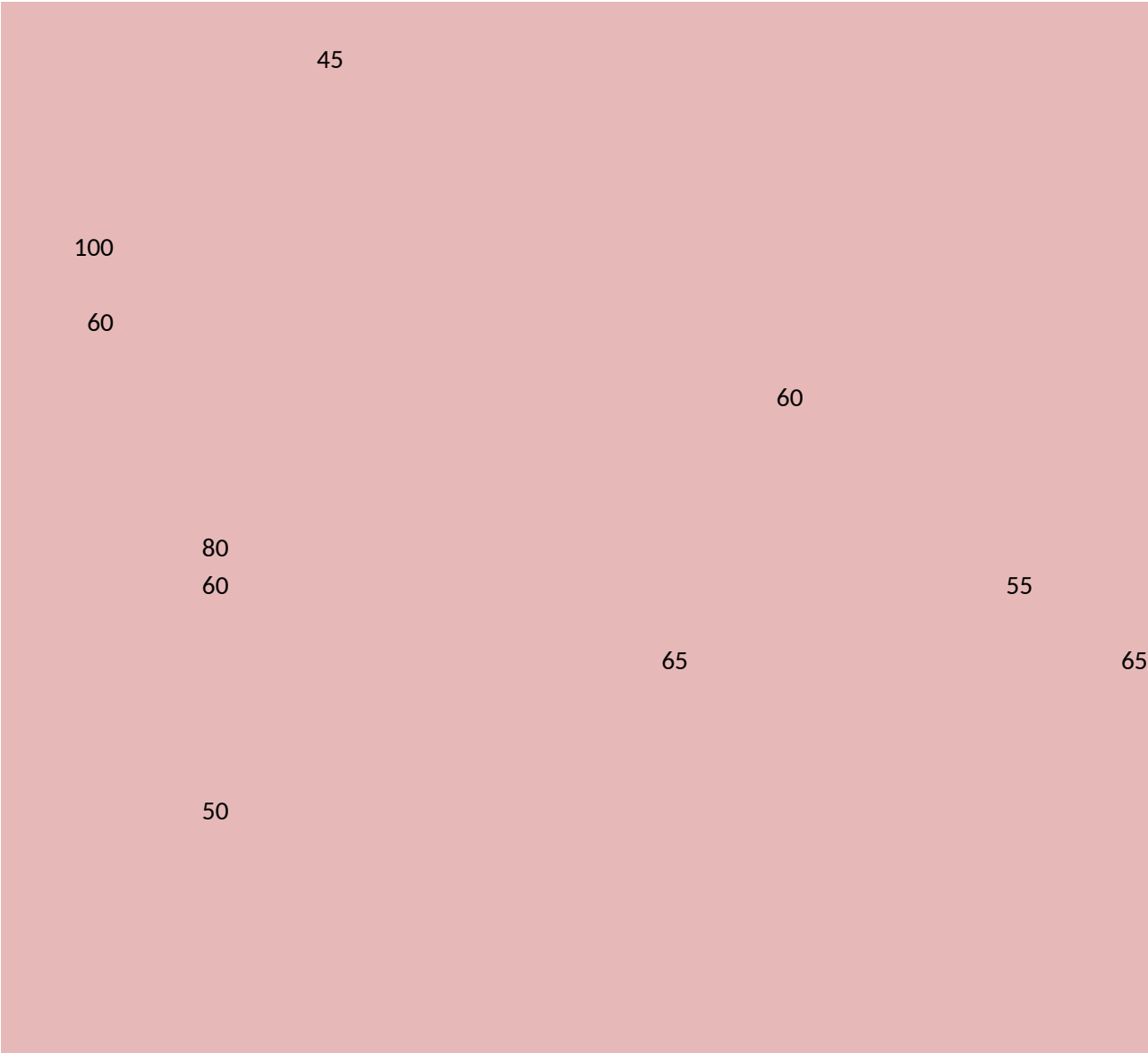
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73 74.44444 60.55556 71 67.72727 68.63636 67.8125 60.41667 66.875 67.08333



Fc10_Mb5Fc10_Mb8Fb10_Mc7Fb10_Mc9Fb10_Mc1Fb10_Mb1Fb10_Mb6Fb10_Mb1Fc11_Mc1 Fc11_Mc2

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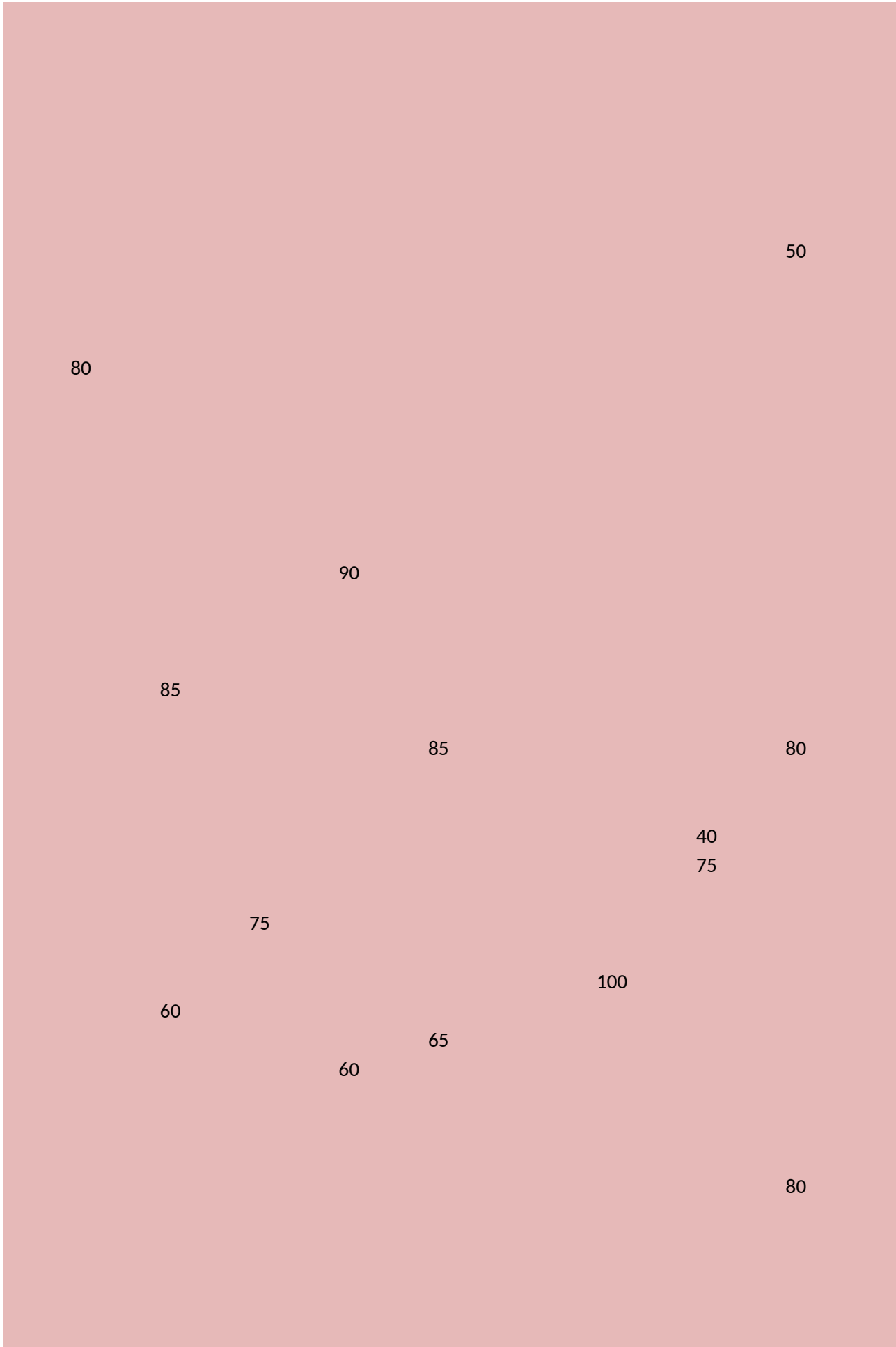
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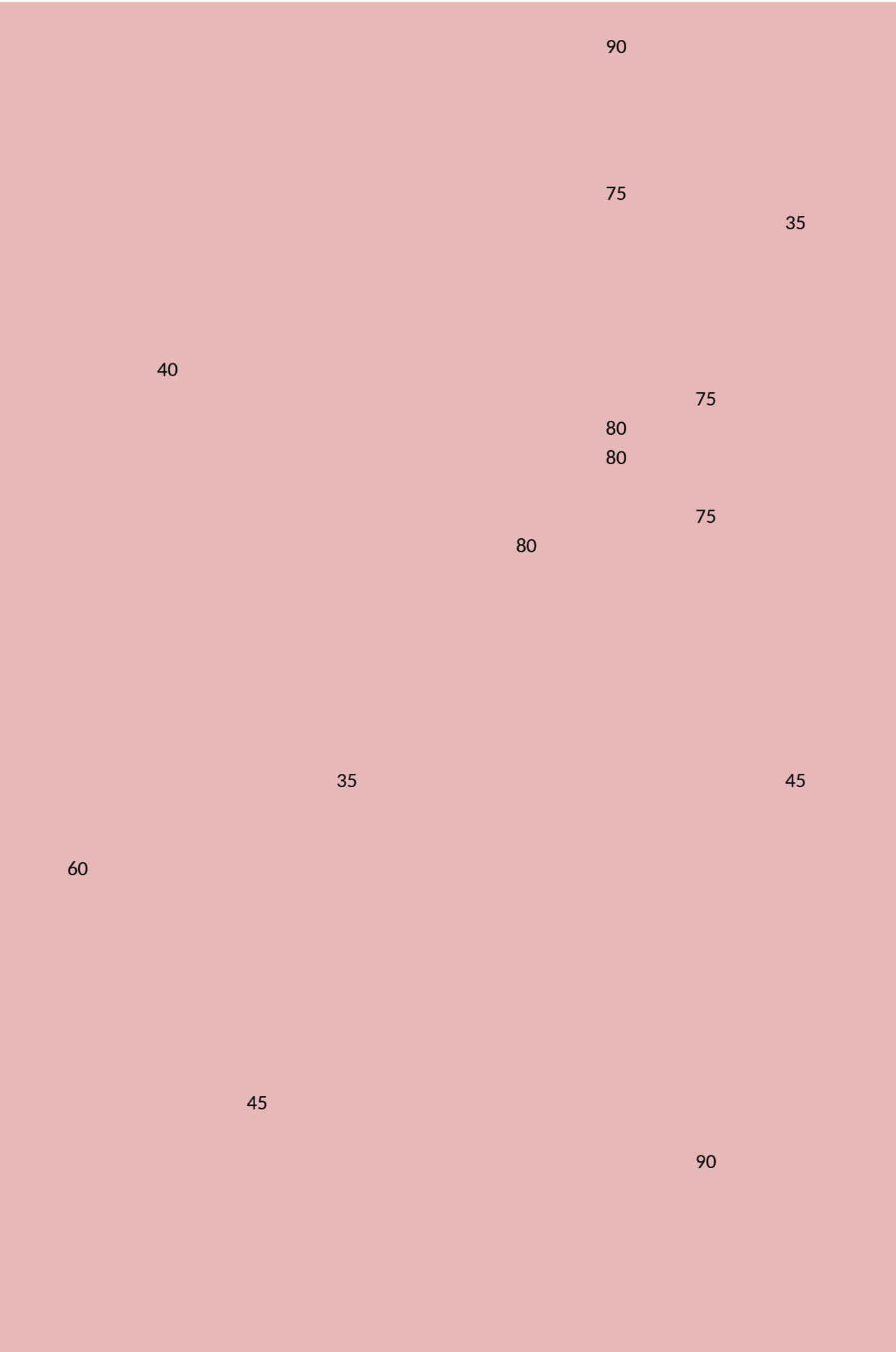
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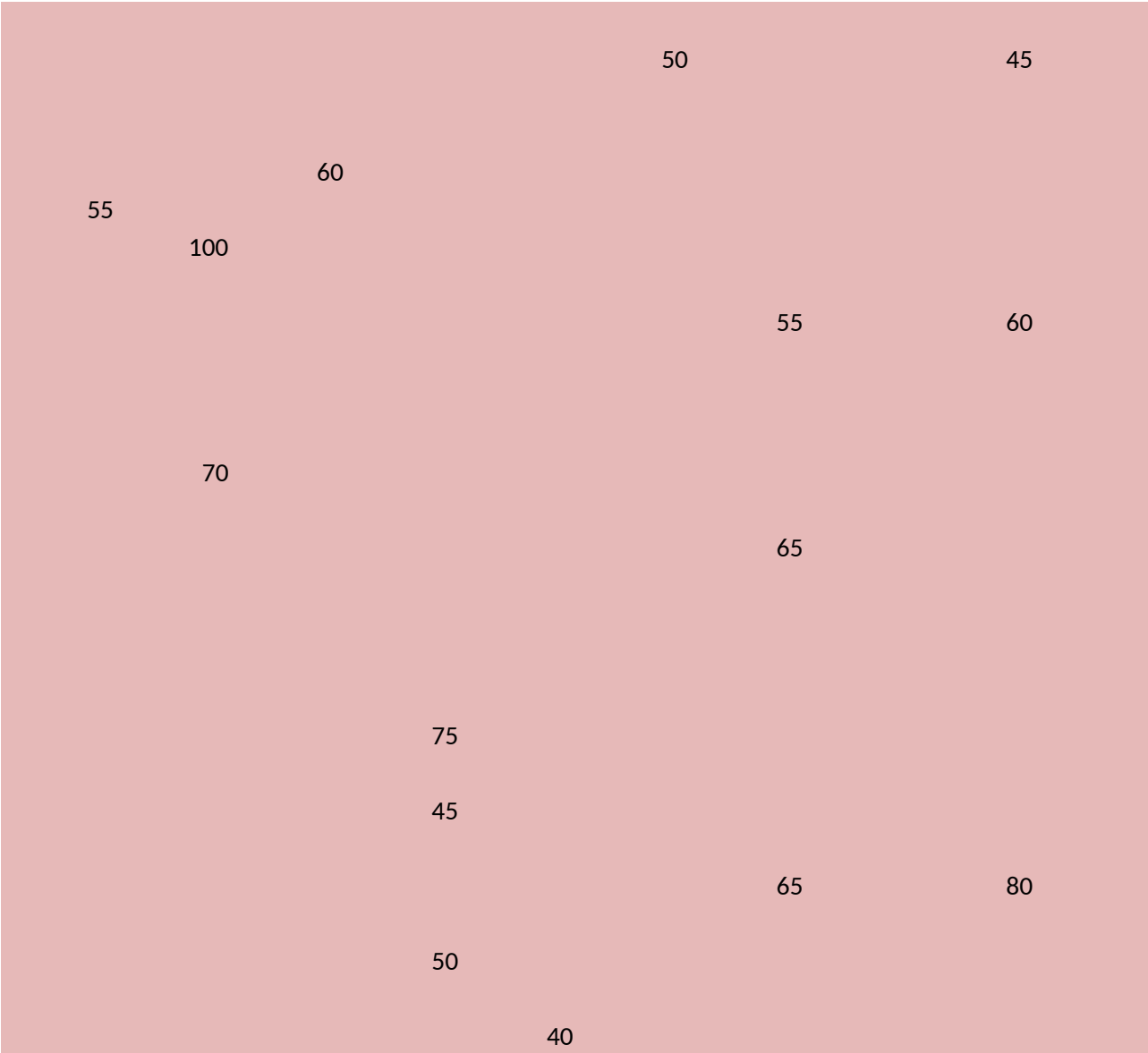
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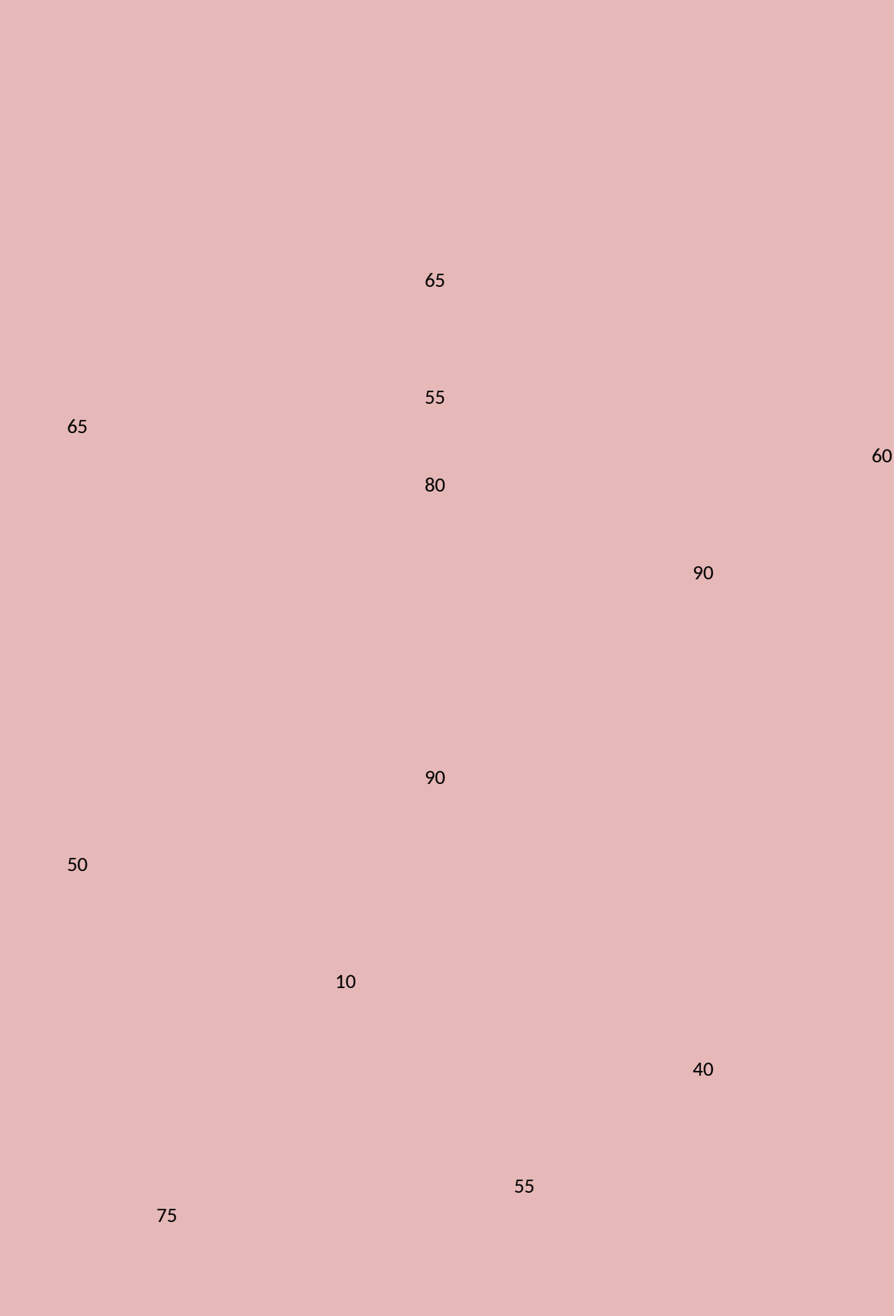
45 60 50



56.875 64.44444 64.23077 58.75 71 57.5 74.23077 60 66.25 52.5



Fc11_Mc6 Fc11_Mb5Fc11_Mb8Fc11_Mb1Fb11_Mc7Fb11_Mc1Fb11_Mc1Fb11_Mb3Fb11_Mb4Fb11_Mb9



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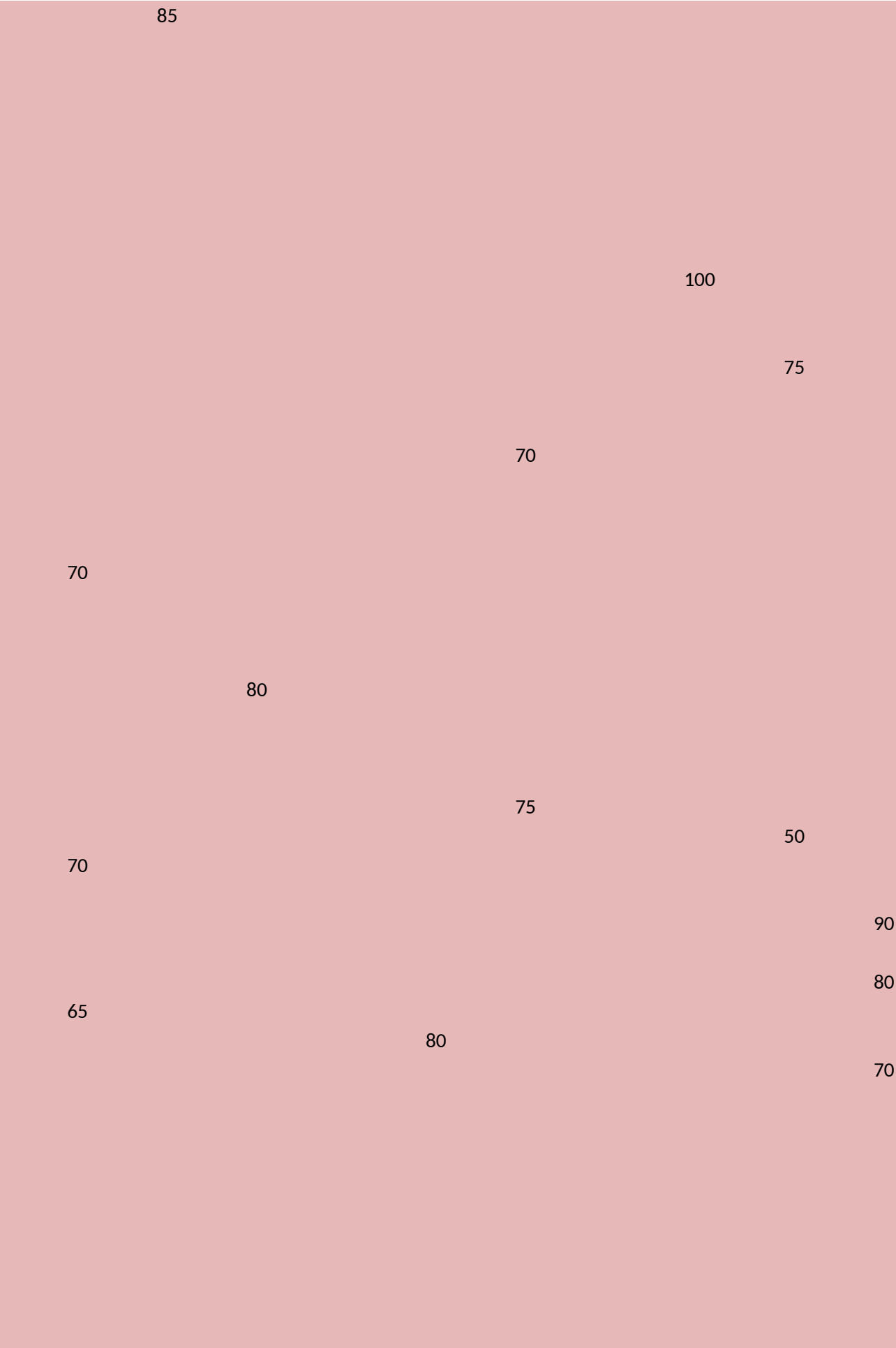
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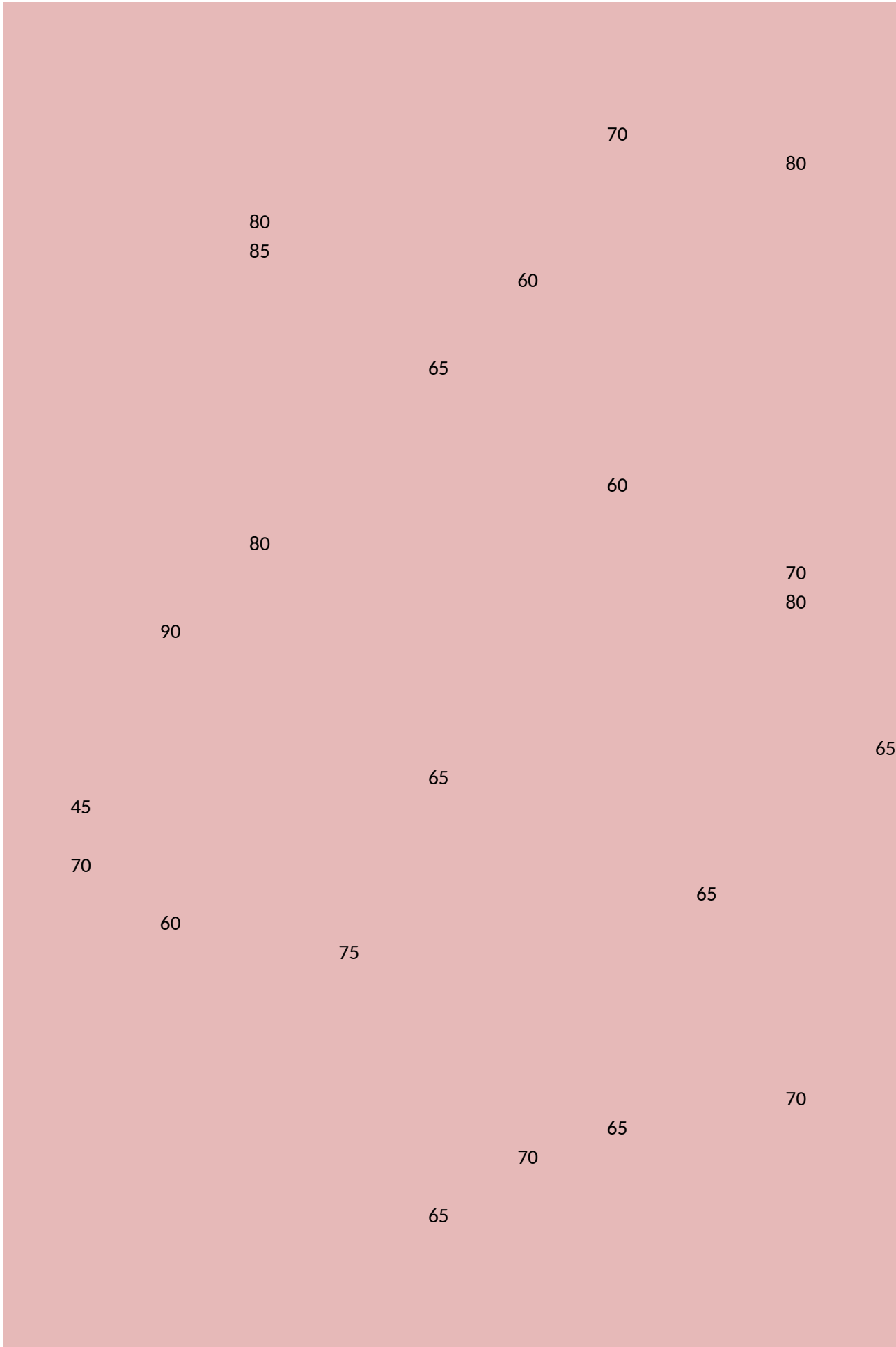
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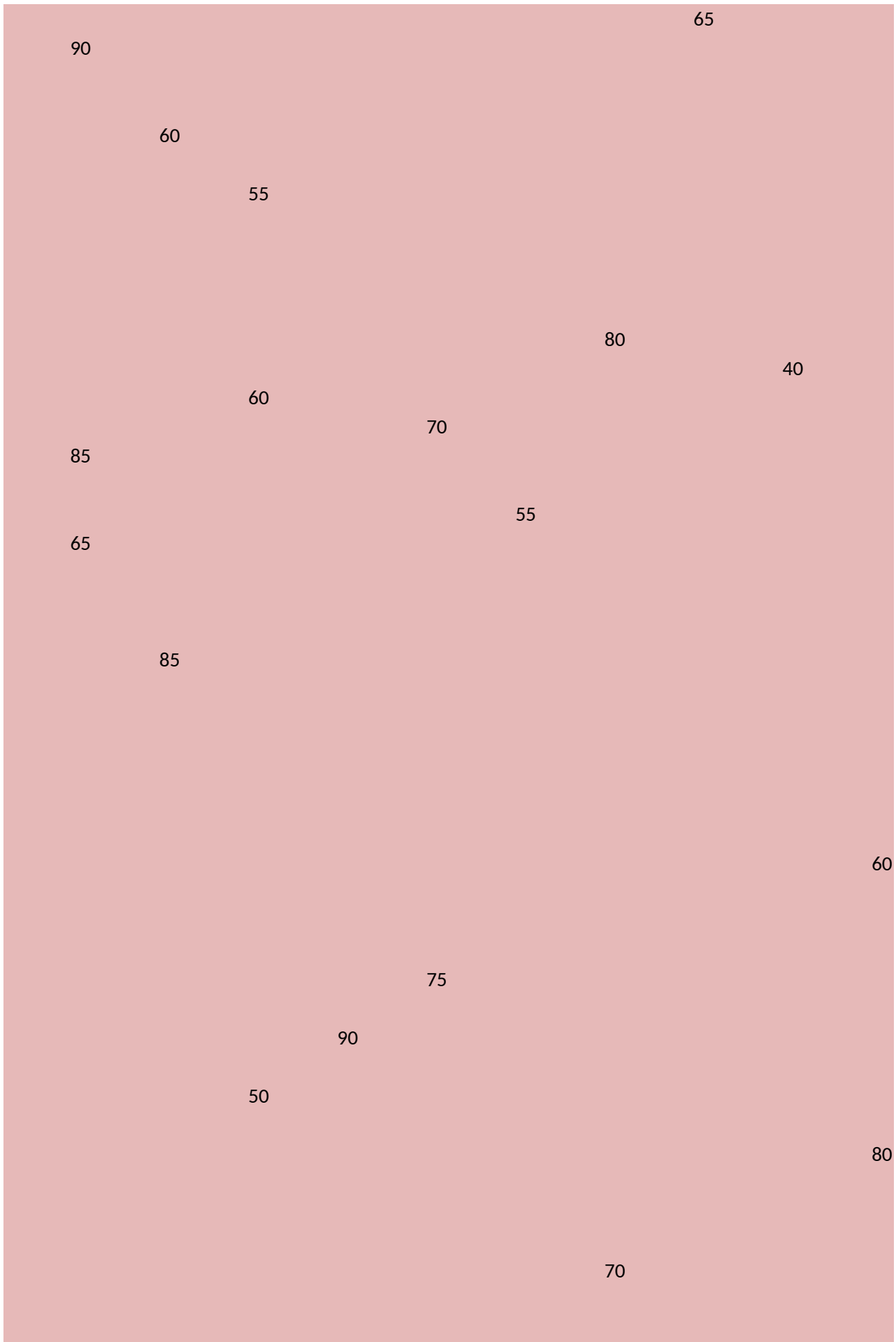
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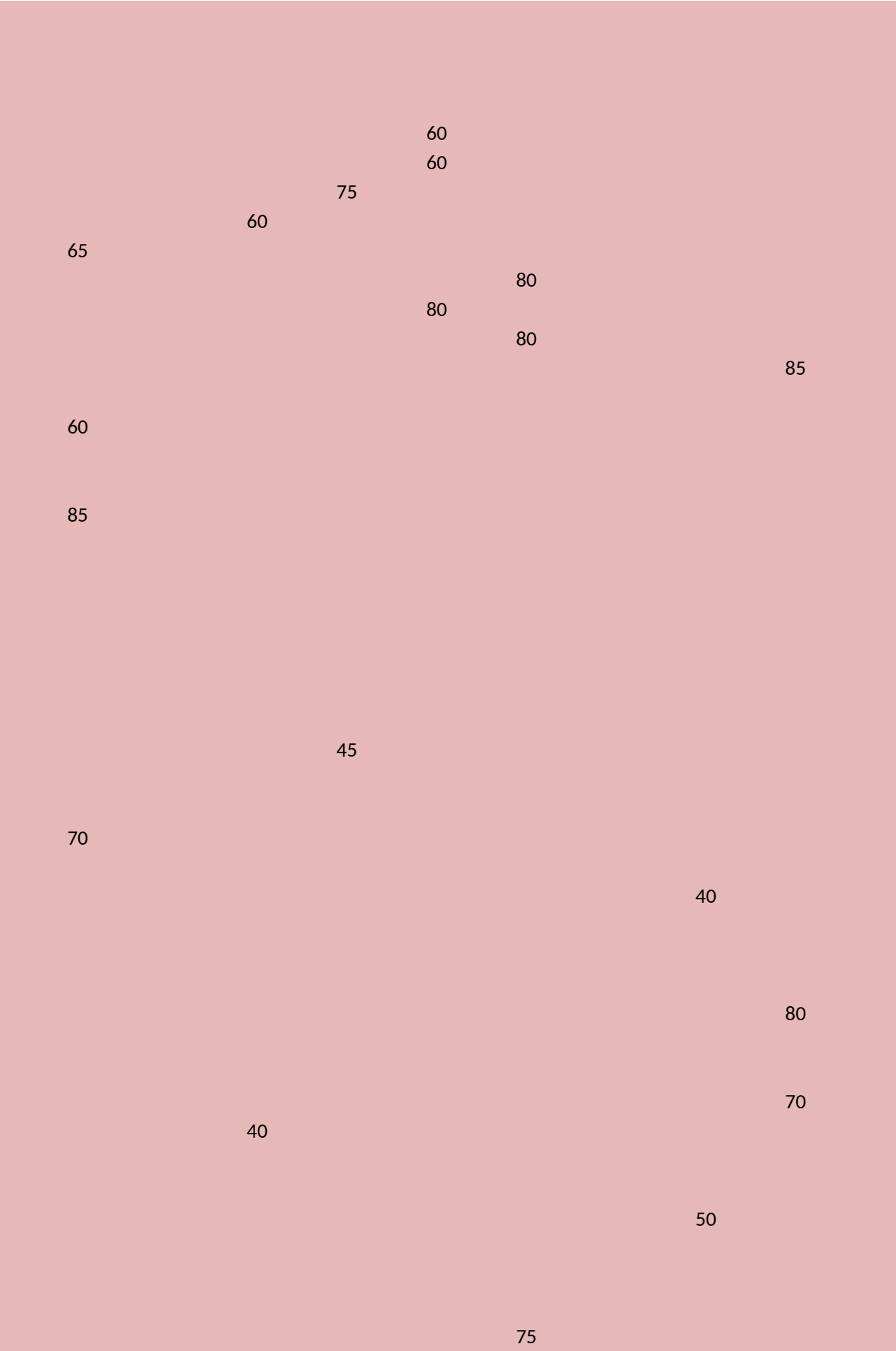
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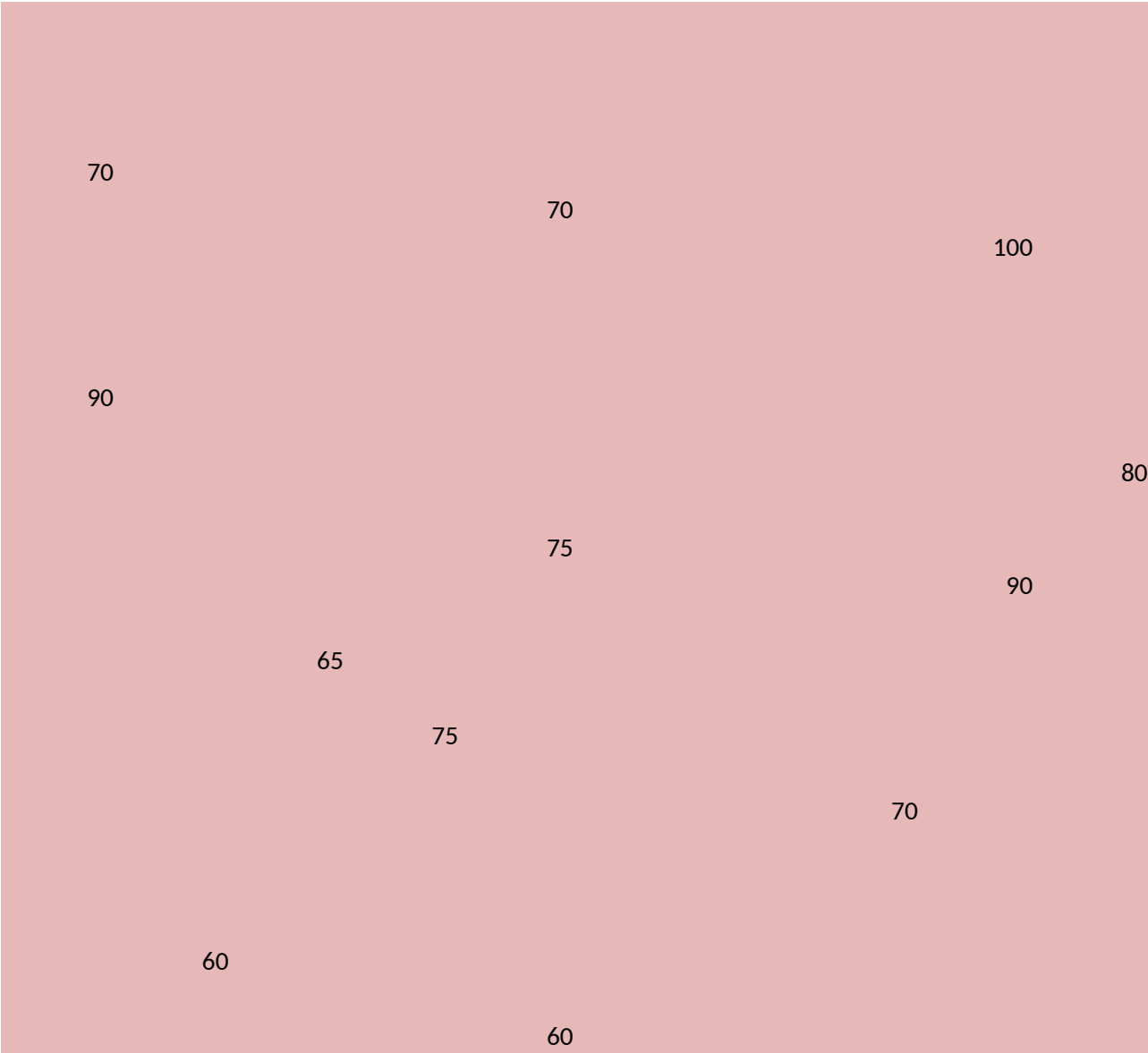
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68.88889 68.75 66.53846 57.5 71.17647 68.88889 69.375 65.5 73.92857 71



Fc12_Mc4 Fc12_Mc9 Fc12_Mc1 Fc12_Mb3 Fc12_Mb6 Fc12_Mb1 Fb12_Mc1 Fb12_Mc7 Fb12_Mc8 Fb12_Mb2

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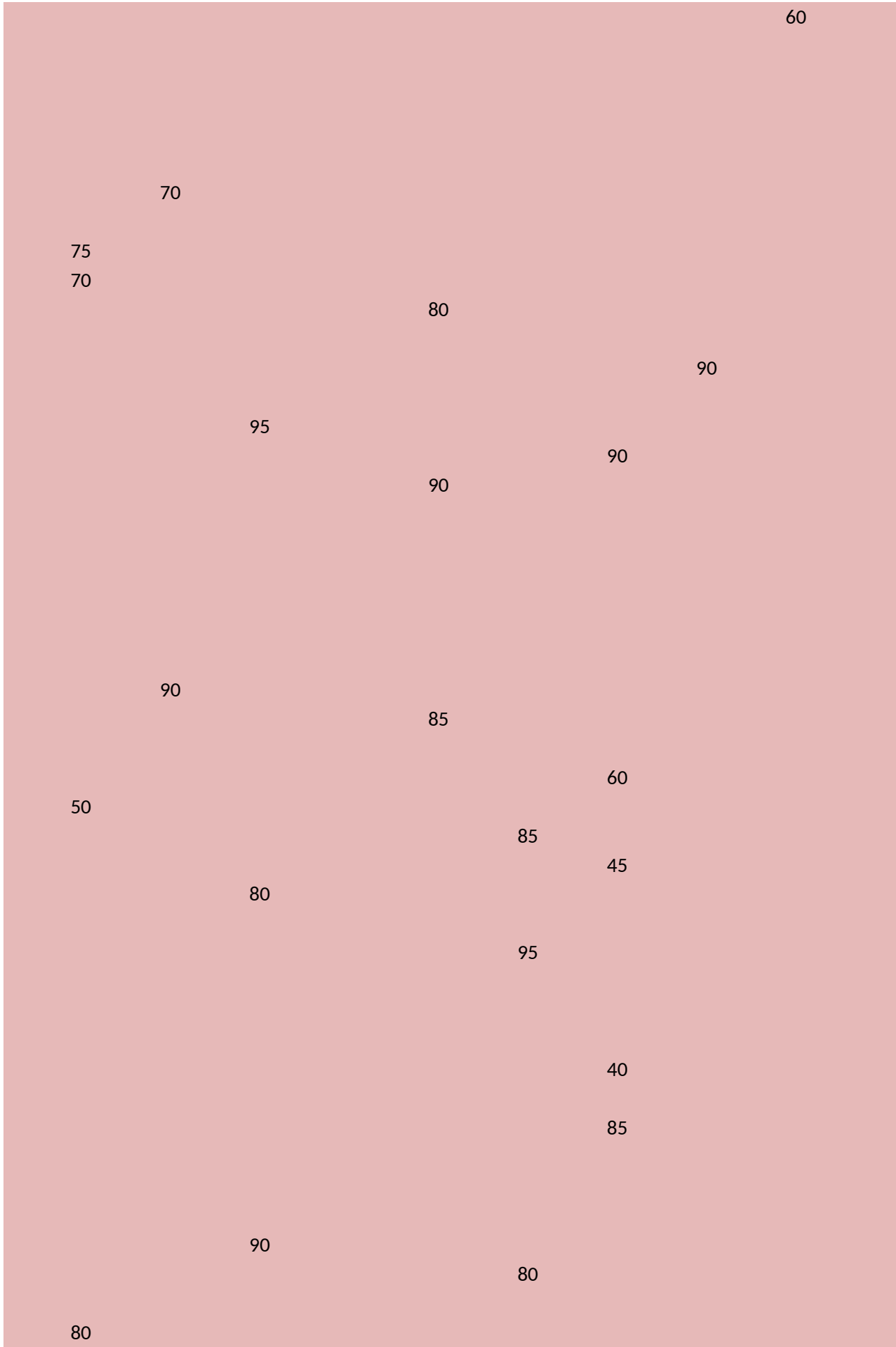
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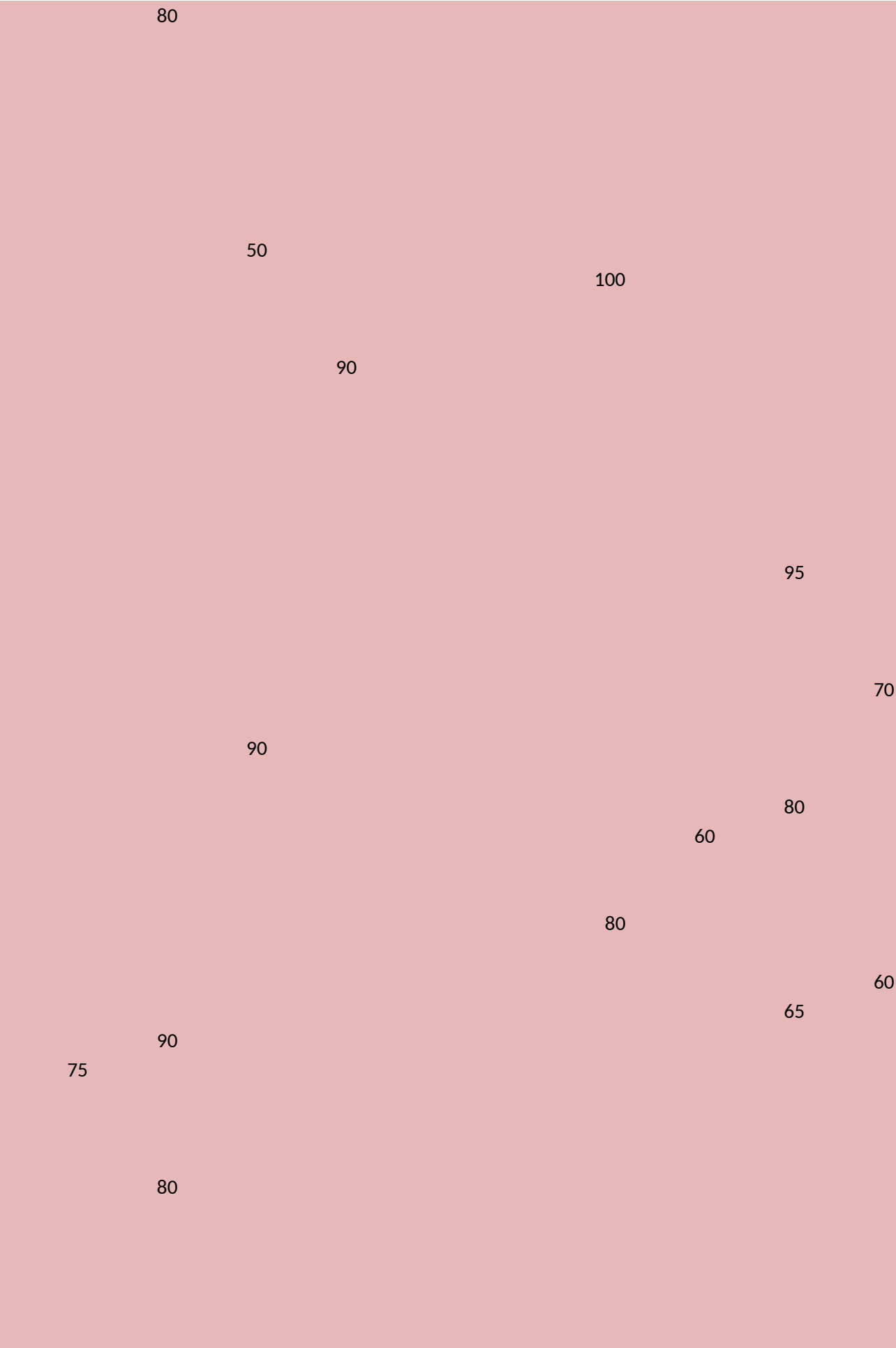
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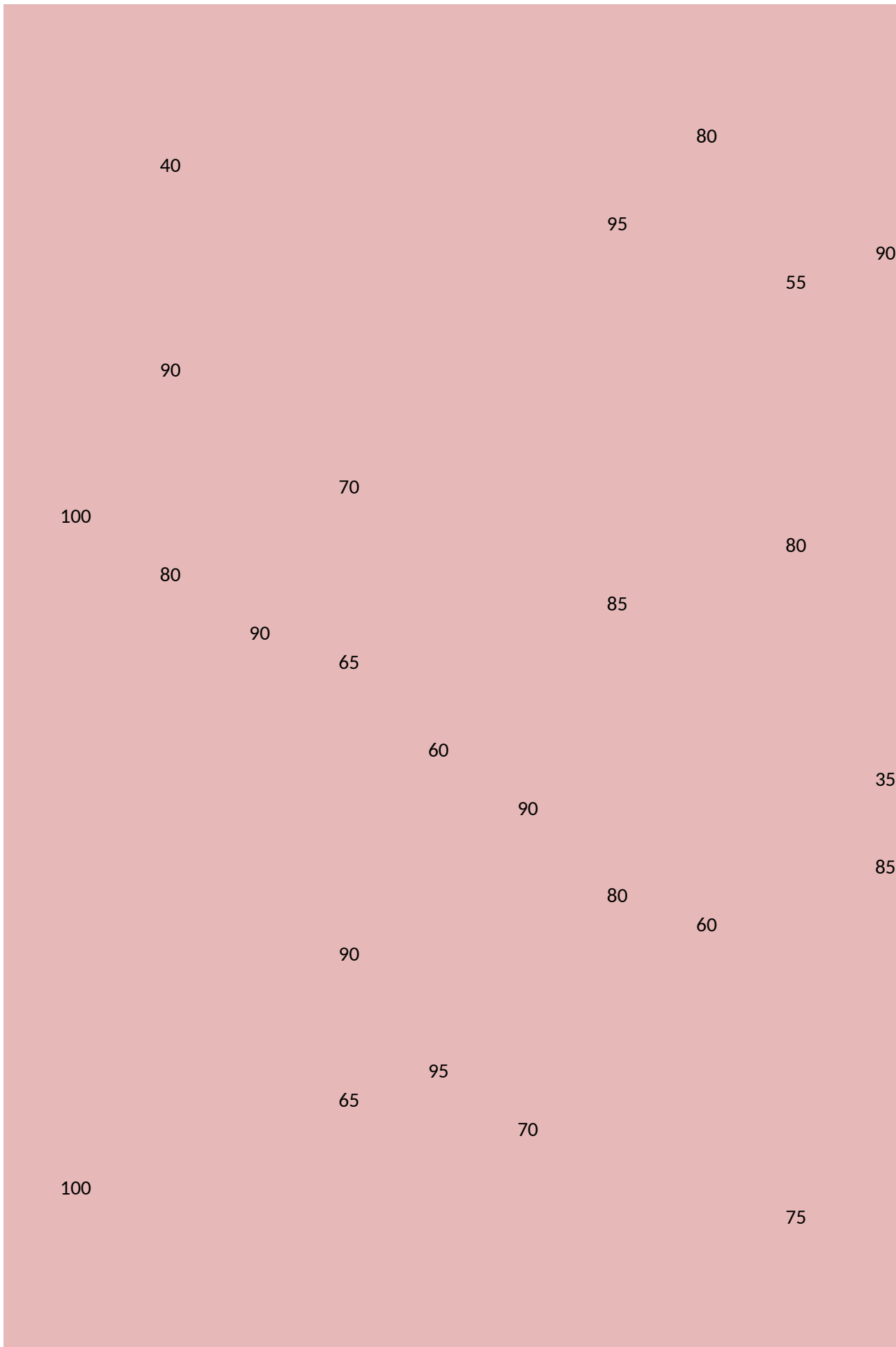
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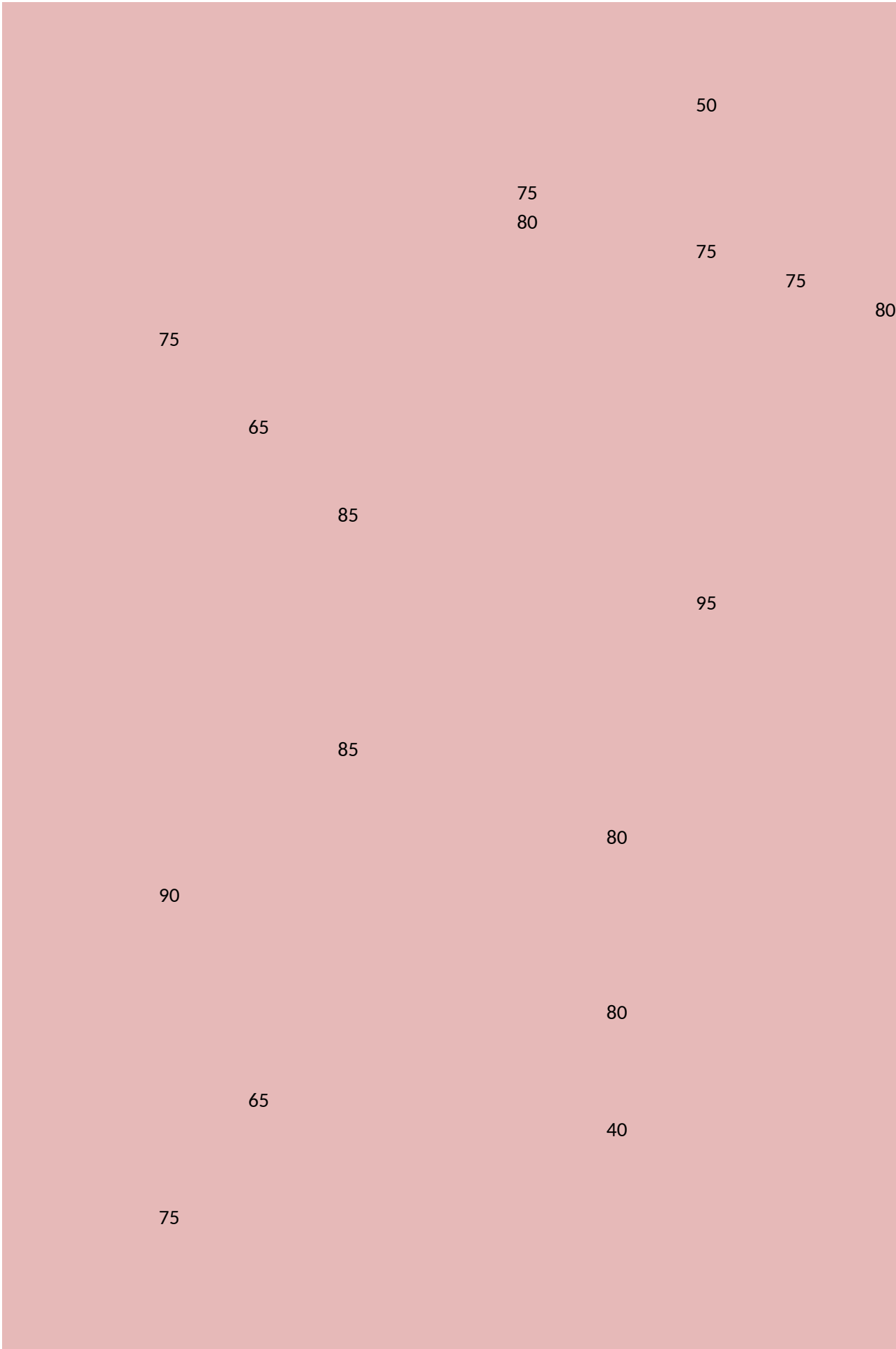
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76.53846 78.61111 76.15385 77.08333 78.75 82.5 71 69.5 76.81818 72.5



Fb12_Mb5Fb12_Mb1Participant Sex

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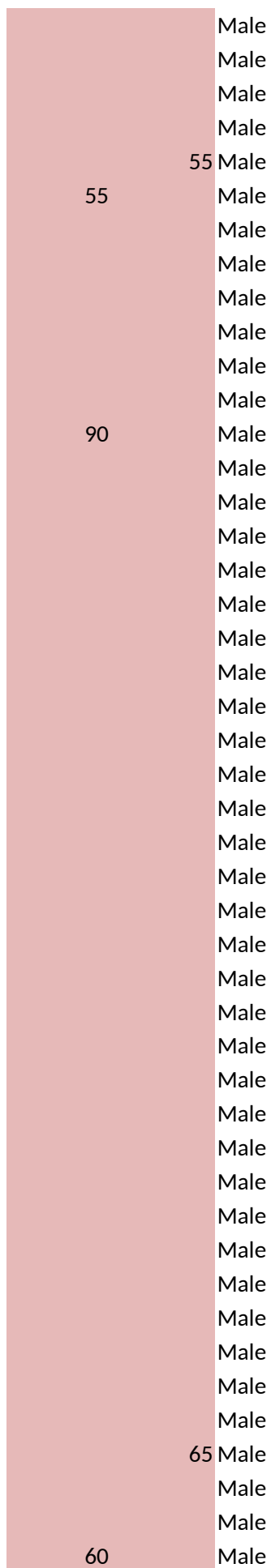
Male

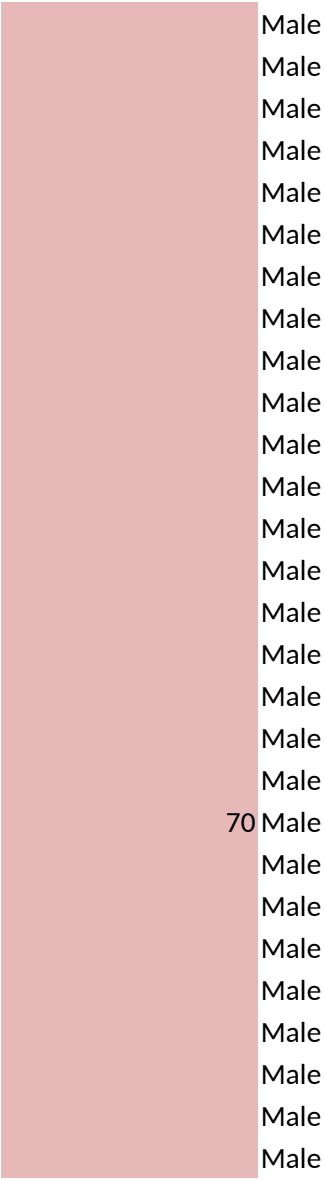
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Male
Male
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66.66667 64

	Female w other
Average	68.89775
SD	17.32084

ESM 1: Mate Choice Copying Papers omitted from meta-analysis due to lack of quantifiable data or were reviews, commentaries or replies.

First Author	Year	Title	Reason
Agrawal	2001	The evolutionary consequences of mate copying on male traits	i
Brooks	1998	The importance of mate copying and cultural inheritance of mating preferences.	ii
Brooks	1998	Mate copying and cultural inheritance - Reply from R. Brooks	ii
Castellano	2012	Computational mate choice: Theory and empirical evidence.	i
Dubois	2012	Social information use may lead to maladaptive decisions: a game theoretic model.	iii
Dugatkin	1996	Copying and mate choice Social learning in animals: The roots of culture	ii
Kirkpatrick	1994	Sexual selection and the evolutionary effects of copying mate choice.	i
Kraak	1996	Copying mate choice': Which phenomena deserve this term?	i
Meggers	1998	Mate copying and cultural inheritance.	i
Nordell	1998	Mate choice copying as public information.	ii
Pruettjones	1992	Independent Versus Nonindependent Mate Choice - Do Females Copy Each Other.	i
Santos	2014	Negative public information in mate choice copying helps the spread of a novel trait.	ii
Servedio	1996	The evolution of mate choice copying by indirect selection.	i
Sirot	2001	Mate-choice copying by females: the advantages of a prudent strategy.	ii
Stohr	1998	Evolution of mate-choice copying: A dynamic model.	iii

Tramm	2008	Evolution of mate-choice imprinting: Competing strategies	i
Uehara	2005	Mate-choice copying as Bayesian decision making.	iii
Vakirtzis	2011	Mate choice copying and nonindependent mate choice: a critical review.	i
Vakirtzis	2009	Mate choice copying and mate quality bias: Different processes, different species.	ii
Vakirtzis	2010	Nonindependent mate choice in monogamy.	i
Wagner	2003	Conspecific copying: A general mechanism of social aggregation.	i
Westneat	2000	Alternative mechanisms of nonindependent mate choice.	ii
Witte	2010	Mate choice copying and mate quality bias: Are they different processes?	ii
<hr/>			
(i)	Review, no data		
(ii)	Theoretical framework		
(iii)	Model		