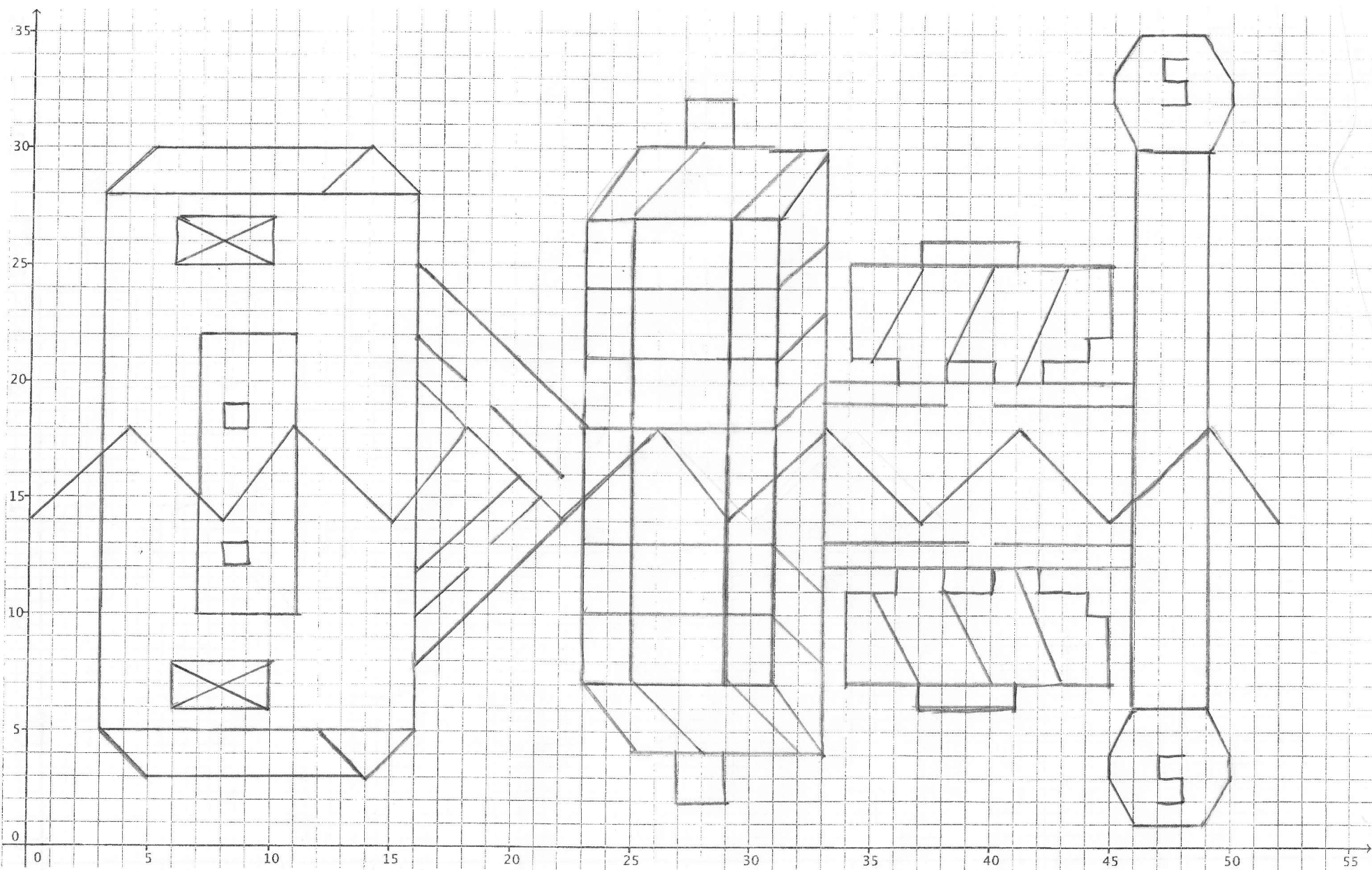


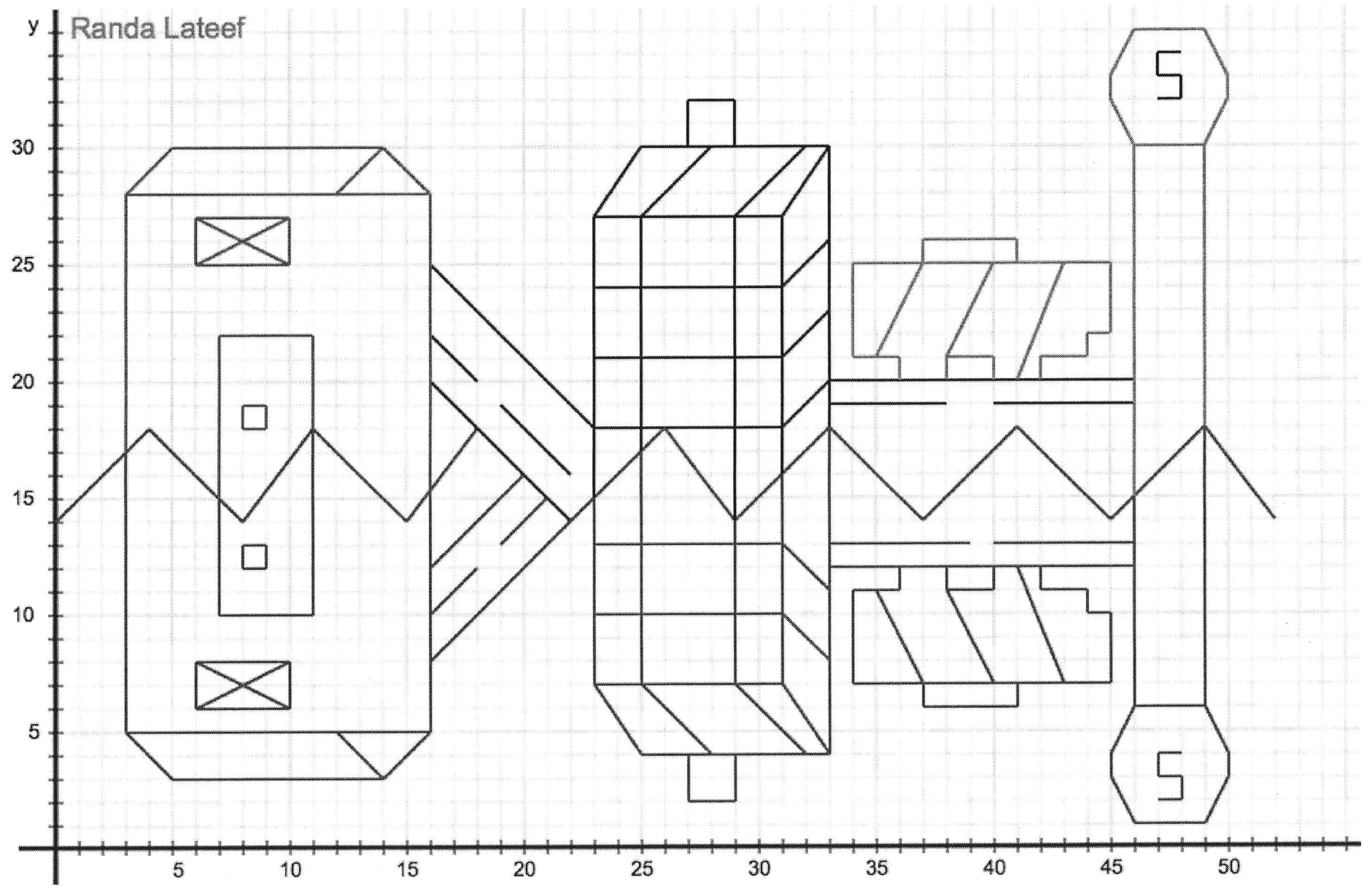
Reflective City

Randa Lateef

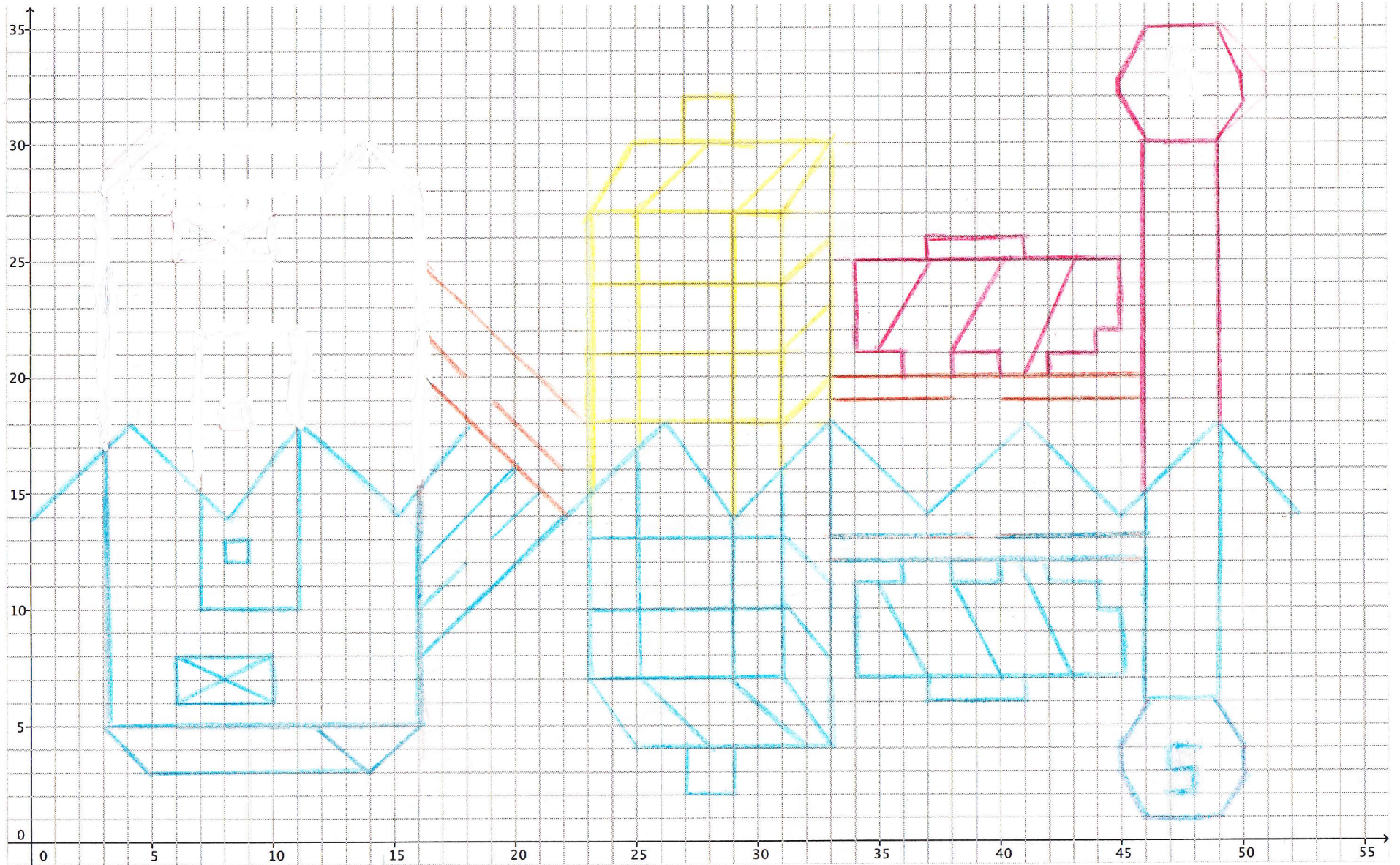
Algebra 1

3/2/14





Randa Latteef
Math Per. 6



Horizontal

Points	Equation	Constrains		Points	Equation	Constrains
A-C	$y_{AC} = 28$	$3 \leq x \leq 12$		C-E	$y_{CE} = 28$	$12 \leq x \leq 16$
P-N	$y_{PN} = 27$	$6 \leq x \leq 10$		Q-M	$y_{QM} = 25$	$6 \leq x \leq 10$
R-L	$y_{RL} = 22$	$7 \leq x \leq 11$		S-T	$y_{ST} = 19$	$8 \leq x \leq 9$
V-U	$y_{VU} = 18$	$8 \leq x \leq 9$		AB-AC	$y_{ABAC} = 13$	$8 \leq x \leq 9$
AE-AD	$y_{AEAD} = 12$	$8 \leq x \leq 9$		AF-AG	$y_{AFAG} = 10$	$7 \leq x \leq 11$
AK-AH	$y_{AKAH} = 8$	$6 \leq x \leq 10$		AL-AI	$y_{ALAI} = 6$	$6 \leq x \leq 10$
B-D	$y_{BD} = 30$	$5 \leq x \leq 14$		AM-AP	$y_{AMAP} = 5$	$3 \leq x \leq 12$
AP-AQ	$y_{APAQ} = 5$	$12 \leq x \leq 16$		AN-AO	$y_{ANAO} = 3$	$5 \leq x \leq 14$
CR-CP	$y_{CRCP} = 32$	$27 \leq x \leq 29$		CV-CU	$y_{CVCU} = 27$	$23 \leq x \leq 25$
CU-CK	$y_{CUCK} = 27$	$25 \leq x \leq 29$		CK-CL	$y_{CKCL} = 27$	$29 \leq x \leq 31$
CW-CX	$y_{CWCX} = 24$	$23 \leq x \leq 25$		CX-CJ	$y_{CXCJ} = 24$	$25 \leq x \leq 31$
CY-CH	$y_{CYCH} = 21$	$23 \leq x \leq 31$		BD-CF	$y_{BDCF} = 18$	$23 \leq x \leq 31$
BI-CB	$y_{BICB} = 13$	$23 \leq x \leq 31$		BK-BZ	$y_{BKBZ} = 10$	$23 \leq x \leq 31$
BM-BW	$y_{BMBW} = 7$	$23 \leq x \leq 31$		BO-BV	$y_{BOBV} = 4$	$25 \leq x \leq 33$
BS-BT	$y_{BSBT} = 2$	$27 \leq x \leq 29$		CT-CM	$y_{CTCM} = 30$	$25 \leq x \leq 33$
DY-EA	$y_{DYEA} = 26$	$37 \leq x \leq 41$		DW-ED	$y_{DWED} = 25$	$34 \leq x \leq 45$
DV-DT	$y_{DVDT} = 21$	$34 \leq x \leq 36$		DR-EK	$y_{DREK} = 21$	$38 \leq x \leq 40$
EH-EG	$y_{EHEG} = 21$	$42 \leq x \leq 44$		EE-EF	$y_{EEEF} = 22$	$44 \leq x \leq 45$
DC-ER	$y_{DCER} = 20$	$33 \leq x \leq 46$		DD-DP	$y_{DDDP} = 19$	$33 \leq x \leq 38$
EM-EQ	$y_{EMEQ} = 19$	$40 \leq x \leq 46$		DF-GF	$y_{DFGF} = 13$	$33 \leq x \leq 39$
GE-FZ	$y_{GEFZ} = 13$	$40 \leq x \leq 46$		DK-DM	$y_{DKDM} = 11$	$34 \leq x \leq 36$
DG-FY	$y_{DGFY} = 12$	$33 \leq x \leq 46$		GN-GI	$y_{GNGI} = 11$	$38 \leq x \leq 40$
GC-GB	$y_{GCCB} = 11$	$42 \leq x \leq 44$		ES-EZ	$y_{ESEZ} = 30$	$46 \leq x \leq 49$

GA-FX	$y_{GAFX} = 10$	$44 \leq x \leq 45$		FQ-FI	$y_{FQFI} = 6$	$46 \leq x \leq 49$
GP-GK	$y_{GPGK} = 5$	$37 \leq x \leq 41$		FR-FS	$y_{FRFS} = 4$	$47 \leq x \leq 48$
DJ-FW	$y_{DJFW} = 7$	$34 \leq x \leq 45$		FT-FU	$y_{FTFU} = 3$	$47 \leq x \leq 48$
EV-EW	$y_{EVEW} = 35$	$46 \leq x \leq 49$		FM-FV	$y_{FMFV} = 2$	$47 \leq x \leq 48$
FA-FB	$y_{FAFB} = 34$	$47 \leq x \leq 48$		FN-FL	$y_{FNFL} = 1$	$46 \leq x \leq 49$
FC-FD	$y_{FCFD} = 33$	$47 \leq x \leq 48$				
FE-FF	$y_{FEFF} = 32$	$47 \leq x \leq 48$				

Verticle

Points	Equation	Constrains		Points	Equation	Constrains
A-AM	$x_{AAM} = 3$	$5 \leq y \leq 28$		E-AQ	$x_{EAQ} = 16$	$5 \leq y \leq 28$
CV-BM	$x_{CVBM} = 23$	$7 \leq y \leq 27$		CU-BN	$x_{CUBN} = 25$	$7 \leq y \leq 27$
CK-BX	$x_{CKBX} = 29$	$7 \leq y \leq 27$		CL-BW	$x_{CLBW} = 31$	$7 \leq y \leq 27$
CM-BV	$x_{CMBV} = 33$	$4 \leq y \leq 30$		R-AF	$x_{RAF} = 7$	$10 \leq y \leq 22$
L-AG	$x_{LAG} = 11$	$10 \leq y \leq 22$		DY-DX	$x_{DYDX} = 37$	$25 \leq y \leq 26$
EA-EB	$x_{EAEB} = 41$	$25 \leq y \leq 26$		DW-DV	$x_{DWDV} = 34$	$21 \leq y \leq 25$
P-Q	$x_{PQ} = 6$	$25 \leq y \leq 27$		N-M	$x_{NM} = 10$	$25 \leq y \leq 27$
S-V	$x_{SV} = 8$	$18 \leq y \leq 19$		T-U	$x_{TU} = 9$	$18 \leq y \leq 19$
AB-AE	$x_{ABAE} = 8$	$12 \leq y \leq 13$		AC-AD	$x_{ACAD} = 9$	$12 \leq y \leq 13$
DT-DS	$x_{DTDS} = 36$	$20 \leq y \leq 21$		DR-DQ	$x_{DRDQ} = 38$	$20 \leq y \leq 21$
EH-EI	$x_{EHEI} = 42$	$20 \leq y \leq 21$		EE-EG	$x_{EEEG} = 44$	$21 \leq y \leq 22$
ED-EF	$x_{EDEF} = 45$	$22 \leq y \leq 25$		DN-DM	$x_{DNDM} = 36$	$11 \leq y \leq 12$
DK-DL	$x_{DKDL} = 34$	$7 \leq y \leq 11$		GG-GN	$x_{GGGN} = 38$	$11 \leq y \leq 12$
GH-GI	$x_{GHGI} = 40$	$11 \leq y \leq 12$		GD-GC	$x_{GDGC} = 42$	$11 \leq y \leq 12$

GB-GA	$x_{GBGA} = 44$	$10 \leq y \leq 11$		FX-FW	$x_{FXFW} = 45$	$7 \leq y \leq 10$
GO-GP	$x_{GOGP} = 37$	$6 \leq y \leq 7$		GL-GK	$x_{GLGK} = 41$	$6 \leq y \leq 7$
ES-FQ	$x_{ESFQ} = 46$	$6 \leq y \leq 30$		EZ-EI	$x_{EZEI} = 49$	$6 \leq y \leq 30$
FA-FC	$x_{FAFC} = 47$	$3 \leq y \leq 34$		FD-FF	$x_{EDFF} = 48$	$32 \leq y \leq 33$
FR-FT	$x_{FRFT} = 47$	$3 \leq y \leq 4$		CR-CS	$x_{CRCS} = 27$	$30 \leq y \leq 32$
CP-CO	$x_{CPCO} = 29$	$30 \leq y \leq 32$		BP-BS	$x_{BPBS} = 27$	$2 \leq y \leq 4$
BR-BT	$x_{BRBT} = 29$	$2 \leq y \leq 4$		EU-ET	$x_{EUET} = 45$	$32 \leq y \leq 33$
EX-EY	$x_{EXEY} = 50$	$32 \leq y \leq 33$		AK-AL	$x_{AKAL} = 6$	$6 \leq y \leq 8$
AH-AI	$x_{AHAI} = 10$	$6 \leq y \leq 8$		FP-FO	$x_{FPFO} = 45$	$3 \leq y \leq 4$
FJ-FK	$x_{FJFK} = 50$	$3 \leq y \leq 4$		FJ-FK	$x_{FJFK} = 50$	$3 \leq y \leq 4$
FU-FV	$x_{FUFV} = 48$	$2 \leq y \leq 3$				

Positive Sloped

Point	Equation	Constrains		Point	Equation	Constrains
D-C	$y_{DC} = 1x + 16$	$12 \leq x \leq 14$		Z-Y	$y_{ZY} = x + 14$	$3 \leq x \leq 4$
N-Q	$y_{NQ} = (1/2)x + 2$	$6 \leq x \leq 10$		W-K	$y_{DC} = (4/3)x + 10/3$	$8 \leq x \leq 11$
AH-AL	$y_{AHAL} = (1/2)x + 6$	$6 \leq x \leq 10$				
AQ-AO	$y_{AQAO} = x - 11$	$14 \leq x \leq 16$		J-BA	$y_{JBA} = (4/3)x - 6$	$15 \leq x \leq 18$
AA-Z	$y_{AAZ} = x + 14$	$0 \leq x \leq 3$		AS-AU	$y_{ASAU} = x - 6$	$16 \leq x \leq 18$
AV-A X	$y_{AVAX} = x - 6$	$19 \leq x \leq 21$		AR-BF	$y_{ARBF} = x - 8$	$16 \leq x \leq 26$
CC-DE	$y_{CCDE} = x - 15$	$9 \leq x \leq 33$		EO-FG	$y_{EOFG} = x - 31$	$45 \leq x \leq 49$
DG-EN	$y_{DOEN} = x - 23$	$37 \leq x \leq 41$		CV-CT	$y_{DC} = (3/2)x - 15/2$	$23 \leq x \leq 25$
CU-CQ	$y_{CUCQ} = x + 2$	$25 \leq x \leq 28$		CK-CN	$y_{CKCN} = x - 2$	$29 \leq x \leq 32$

CU-CQ	$y_{CUCQ} = x + 2$	$25 \leq x \leq 28$		CK-CN	$y_{CKCN} = x - 2$	$29 \leq x \leq 32$
CJ-DA	$y_{CJDA} = x - 7$	$31 \leq x \leq 33$		CH-DB	$y_{CHDB} = x - 10$	$31 \leq x \leq 33$
CF-DC	$y_{CFDC} = x - 13$	$31 \leq x \leq 33$		DX-DU	$y_{DXDU} = 2x - 49$	$35 \leq x \leq 37$
DZ-DR	$y_{DZDR} = 2x - 55$	$38 \leq x \leq 40$		EC-EJ	$y_{ECEJ} = (5/2)x - 1656/2$	$41 \leq x \leq 43$
EU-EV	$y_{EUEV} = 2x - 57$	$45 \leq x \leq 46$		FQ-FP	$y_{FQFP} = 2x - 86$	$45 \leq x \leq 46$
FK-FL	$y_{FKFL} = 2x - 97$	$49 \leq x \leq 50$		CL-CM	$y_{CLCM} = (3/2)x - 39/2$	$31 \leq x \leq 33$

Negative Sloped

Point	Equation	Constrains		Point	Equation	Constrains
P-M	$y_{PM} = (-1/2)x + 30$	$6 \leq x \leq 10$		AK-AI	$y_{AKAI} = (-1/2)x + 11$	$6 \leq x \leq 10$
AM-AN	$y_{AMAN} = -x - 8$	$3 \leq x \leq 5$		AP-AO	$y_{APAO} = -x + 17$	$12 \leq x \leq 14$
Y-W	$y_{YW} = -x + 22$	$4 \leq x \leq 8$		K-J	$y_{KJ} = -x + 29$	$11 \leq x \leq 16$
F-BD	$y_{FBD} = -x + 41$	$16 \leq x \leq 23$		G-BC	$y_{GBC} = -x + 38$	$16 \leq x \leq 18$
BB-AY	$y_{BBAY} = -x + 38$	$19 \leq x \leq 22$		H-AW	$y_{HAW} = -x + 36$	$16 \leq x \leq 22$
BF-CC	$y_{BFCC} = (-4/3)x + 158/3$	$26 \leq x \leq 29$		DE-DO	$y_{DEDO} = -x + 51$	$33 \leq x \leq 37$
EN-EO	$y_{ENEO} = -x - 59$	$41 \leq x \leq 45$		FG-FH	$y_{FGFH} = (-4/3)x + 250/3$	$49 \leq x \leq 52$
D-E	$y_{DE} = -x + 44$	$14 \leq x \leq 16$		CB-DH	$y_{CBDH} = -x + 44$	$31 \leq x \leq 33$
BZ-DI	$y_{BZDI} = -x + 41$	$31 \leq x \leq 33$		BX-BU	$y_{BXBUI} = -x + 36$	$27 \leq x \leq 35$
BW-BV	$y_{BWBV} = (-3/2)x + 107/2$	$31 \leq x \leq 33$		BN-BQ	$y_{BNBQ} = -x + 32$	$25 \leq x \leq 28$

BM-BO	$y_{BMBO} = (-3/2)x + 83/2$	$23 \leq x \leq 25$		DL-GO	$y_{DLGO} = -2x + 81$	$35 \leq x \leq 37$
GN-GM	$y_{GNGM} = -2x + 87$	$38 \leq x \leq 40$		ET-ES	$y_{ETES} = -2x + 122$	$45 \leq x \leq 46$
GQ-GJ	$y_{GQGJ} = (-5/2)x + 229/2$	$41 \leq x \leq 43$		EW-EX	$y_{EWEX} = -2x + 133$	$49 \leq x \leq 50$
FO-FN	$y_{FOFN} = -2x + 93$	$45 \leq x \leq 46$		FI-FJ	$y_{FIFJ} = -2x + 104$	$y = -2x + 104$

A-B

$$y = mx + b$$

$$A(3, 28) \quad B(5, 30)$$

$$\frac{y_1 - y_2}{x_1 - x_2} = \frac{28 - 30}{3 - 5} = \frac{-2}{-2} = 1$$

$$y = 1x + b$$

$$30 = 1(5) + b$$

$$30 = 5 + b$$

$$-5 \quad -5 \quad 25 = b$$

$$y = 1x + 25$$

Constrains = $3 \leq x \leq 5$

D-C

$$D(14, 30) \quad C(12, 28)$$

$$y = mx + b$$

$$\frac{y_1 - y_2}{x_1 - x_2}$$

$$\frac{30 - 28}{14 - 12} = \frac{2}{2} = 1$$

$$y = 1x + b$$

$$28 = 1(12) + b$$

$$28 = 12 + b \quad 16 = b$$

$$-12 \quad -12$$

$$y = 1x + 16$$

Constrains = $12 \leq x \leq 14$

D-E

$$y = mx + b$$

$$\frac{y_1 - y_2}{x_1 - x_2}$$

$$D(14, 30) \quad E(16, 28)$$

$$\frac{30 - 28}{14 - 16} = \frac{2}{-2} = -1$$

$$y = -1x + b$$

$$30 = -1(14) + b$$

$$y = -1x + 44$$

$$30 = -14 + b$$

$$+14 \quad +14$$

$$b = 44$$

Constrains = $14 \leq x \leq 16$

P-M $y = mx + b$

$$P(6, 27) \quad M(10, 25)$$

$$\frac{y_1 - y_2}{x_1 - x_2}$$

$$\frac{27 - 25}{6 - 10} = \frac{2}{-4} = -\frac{1}{2}$$

$$y = -\frac{1}{2}x + b$$

$$25 = -\frac{1}{2}(10) + b$$

$$b = 30$$

$$25 = -5 + b$$

$$+5 \quad +5$$

$$y = -\frac{1}{2}x + 30$$

Constrains = $6 \leq x \leq 10$

N-Q $y = mx + b$

$$N(10, 27) \quad Q(6, 25)$$

$$\frac{y_1 - y_2}{x_1 - x_2}$$

$$\frac{27 - 25}{10 - 6} = \frac{2}{4} = \frac{1}{2}$$

$$y = \frac{1}{2}x + b$$

$$25 = \frac{1}{2}(6) + b$$

$$25 = 3 + b$$

$$-3 \quad -3$$

$$b = 22$$

$$y = \frac{1}{2}x + 22$$

Constrains = $6 \leq x \leq 10$

Ak-AI $y = mx + b$

$$Ak(6, 8) \quad AI(10, 6)$$

$$\frac{y_1 - y_2}{x_1 - x_2}$$

$$\frac{8 - 6}{6 - 10} = \frac{2}{-4} = -\frac{1}{2}$$

$$y = -\frac{1}{2}x + b$$

$$6 = -\frac{1}{2}(10) + b$$

$$6 = -5 + b$$

$$+5 \quad +5$$

$$y = -\frac{1}{2}x + 11$$

Constrains = $6 \leq x \leq 10$

AH-AL

$$y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$$

$$AH(10, 8) \quad AL(6, 6)$$

$$\frac{8-6}{10-6} = \frac{2}{4} = \frac{1}{2}$$

$$y = \frac{1}{2}x + b \quad 8 = \frac{1}{2}(10) + b$$

$$3 = b \quad 6 = \frac{1}{2} + b$$

$$y = \frac{1}{2}x + 3$$

$$\text{constraints} = 6 \leq x \leq 10$$

AM-AN

$$y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$$

$$AM(3, 5) \quad AN(5, 3)$$

$$\frac{5-3}{3-5} = \frac{2}{-2} = -1$$

$$y = -1x + b$$

$$5 = -1(3) + b$$

$$8 = b \quad 3 = -3 + b$$

$$y = -1x + 8$$

$$\text{constraints} = 3 \leq x \leq 5$$

AP-AO

$$y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$$

$$AP(12, 5) \quad AO(14, 3)$$

$$\frac{5-3}{12-14} = \frac{2}{-2} = -1$$

$$y = -1x + b$$

$$5 = -1(12) + b$$

$$17 = b \quad 3 = -12 + b$$

$$y = -1x + 17$$

$$\text{constraints} = 12 \leq x \leq 14$$

AQ-AO $y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$

$$AQ(16, 5) \quad AO(14, 3)$$

$$\frac{5-3}{16-14} = \frac{2}{2} = 1$$

$$y = 1x + b \quad 5 = 1(14) + b$$

$$-11 = b \quad 3 = 14 + b$$

$$y = 1x - 11$$

$$\text{constraints} = 14 \leq x \leq 16$$

AA-Z $y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$

$$AA(0, 14) \quad Z(3, 17)$$

$$\frac{14-17}{0-3} = \frac{-3}{-3} = 1$$

$$y = 1x + b$$

$$14 = 1(0) + b$$

$$14 = 0 + b$$

$$14 = b$$

$$y = 1x + 14$$

$$\text{constraints} = 0 \leq x \leq 3$$

Z-Y $y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$

$$Z(3, 17) \quad Y(4, 18)$$

$$\frac{17-18}{3-4} = \frac{-1}{-1} = 1$$

$$y = 1x + b$$

$$b = 14$$

$$18 = 1(4) + b$$

$$18 = 4 + b$$

$$-4 = -4$$

$$y = 1x + 14$$

$$\text{constraints} = 3 \leq x \leq 4$$

Y-W

$$y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$$

$$Y(4, 18) \quad W(8, 14)$$

$$\frac{18 - 14}{4 - 8} = \frac{4}{-4} = -1$$

$$y = -1x + b \quad 18 = -1(4) + b$$

$$22 = b \quad 18 = -4 + b$$

$$\boxed{y = -1x + 22}$$

$$\boxed{4 \leq x \leq 8}$$

F-BD $F(16, 25)$ $BD(23, 18)$

$$\frac{25 - 18}{16 - 23} = \frac{7}{-7} = -1$$

$$y = -1x + b$$

$$25 = -1(16) + b$$

$$25 = -16 + b$$

$$+16 \quad +16 \quad 41 = b$$

$$\boxed{y = -1x + 41}$$

$$\boxed{16 \leq x \leq 23}$$

W-K

$$y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$$

$$W(8, 14) \quad K(11, 18)$$

$$\frac{14 - 18}{8 - 11} = \frac{-4}{-3} = \frac{4}{3}$$

$$\frac{4}{3} \cdot 11 = \frac{44}{3} \quad y = \frac{4}{3}x + b \quad 18 = \frac{4}{3}(11) + b$$

$$b = \frac{10}{3}$$

$$18 = \frac{44}{3} + b$$

$$\frac{18 - 44}{1} = \frac{-26}{1} = -26$$

$$\boxed{y = \frac{4}{3}x + \frac{10}{3}}$$

$$\boxed{8 \leq x \leq 11}$$

G-BC $G(16, 22)$ $BC(18, 20)$

$$\frac{y_1 - y_2}{x_1 - x_2}$$

$$\frac{22 - 20}{16 - 18} = \frac{2}{-2} = -1$$

$$y = -1x + b$$

$$b = 38$$

$$22 = -1(16) + b$$

$$22 = -16 + b$$

$$+16 \quad +16$$

$$\boxed{y = -1x + 38}$$

$$\boxed{16 \leq x \leq 18}$$

K-J

$$y = mx + b \quad \frac{y_1 - y_2}{x_1 - x_2}$$

$$K(11, 18) \quad J(15, 14)$$

$$\frac{18 - 14}{11 - 15} = \frac{4}{-4} = -1$$

$$y = -1x + b \quad 18 = -1(11) + b$$

$$b = 29 \quad 18 = -11 + b$$

$$\boxed{y = -1x + 29}$$

$$\boxed{11 \leq x \leq 15}$$

BB-AY $BB(19, 19)$ $AY(22, 16)$

$$\frac{19 - 16}{19 - 22} = \frac{3}{-3} = -1$$

$$y = -1x + b$$

$$b = 38$$

$$19 = -1(19) + b$$

$$19 = -19 + b$$

$$+19 \quad +19$$

$$\boxed{y = -1x + 38}$$

$$\boxed{19 \leq x \leq 22}$$

J-BA

J(15, 14) BA(18, 18)

$$\frac{14-18}{15-18} = \frac{-4}{-3} = \frac{4}{3}$$

$$y = \frac{4}{3}x + b \quad 18 = \frac{4}{3}(18) + b$$
$$b = -6 \quad 18 = 24 + b$$
$$-24 \quad -24$$

$$y = \frac{4}{3}x - 6$$
$$15 \leq x \leq 18$$

~~$\frac{4}{3} \cdot \frac{18}{1}$~~

AS-Au AS(16, 10) Au(18, 12)

$$\frac{10-12}{16-18} = \frac{-2}{-2} = 1$$

$$y = 1x + b \quad 10 = 1(16) + b$$
$$b = -6 \quad 10 = 16 + b$$
$$-6 \quad -6$$

$$y = 1x - 6$$
$$16 \leq x \leq 18$$

H-AW

H(16, 20) AW(22, 14)

$$\frac{20-14}{16-22} = \frac{6}{-6} = -1$$

$$y = -1x + b \quad 20 = -1(16) + b$$
$$b = 36 \quad 20 = -16 + b$$
$$+16 \quad +16$$

$$y = -1x + 36$$
$$16 \leq x \leq 22$$

AV-Ax AV(19, 13) AX(21, 15)

$$\frac{13-15}{19-21} = \frac{-2}{-2} = 1$$

$$y = 1x + b \quad 13 = 1(19) + b$$
$$b = -6 \quad 13 = 19 + b$$
$$-6 \quad -6$$

$$y = 1x - 6$$
$$19 \leq x \leq 21$$

AZ-AZ

AT(16, 12) Az(20, 18)

$$\frac{12-18}{16-20} = \frac{-6}{-4} = \frac{3}{2}$$

$$y = \frac{3}{2}x + b \quad 12 = \frac{3}{2}(16) + b$$
$$b = -4 \quad 12 = 24 + b$$
$$-16 \quad -16$$

$$y = \frac{3}{2}x - 4$$
$$16 \leq x \leq 20$$

AR-BF AR(16, 8) BF(26, 18)

$$\frac{8-18}{16-26} = \frac{-10}{-10} = 1$$

$$y = 1x + b \quad 8 = 1(16) + b$$
$$b = -8 \quad 8 = 16 + b$$
$$-8 \quad -8$$

$$y = 1x - 8$$
$$16 \leq x \leq 26$$



BF-CC

BF(26,18) CC(29,14)

$$\frac{34}{104} - \frac{96}{14} = \frac{104}{3} - \frac{104}{3} = 0$$

$$\frac{104}{3} = 34\frac{2}{3}$$

$$\frac{104}{3} + \frac{18}{3} = \frac{122}{3}$$

$$52\frac{2}{3} = \frac{158}{3}$$

$$\frac{18-14}{26-29} = \frac{4}{-3}$$

$$y = \frac{4}{-3}x + b \quad 18 = \frac{4}{-3}(26) + b$$

$$18 = \frac{104}{-3} + b$$

$$\frac{104}{3} + \frac{104}{3}$$

$$52\frac{2}{3} = b$$

$$y = \frac{4}{-3}x + \frac{158}{3}$$

$$26 \leq x \leq 29$$

Do-EN Do(37,14) EN(41,18)

$$\frac{14-18}{37-41} = \frac{-4}{-4} = 1$$

$$y = 1x + b \quad 14 = 1(37) + b$$

$$-23 = b$$

$$14 = \frac{37}{-37} + b$$

$$\frac{37}{23}$$

$$y = 1x - 23$$

$$37 \leq x \leq 41$$

CC-DE

CC(29,14) DE(33,18)

$$\frac{14-18}{29-33} = \frac{-4}{-4} = 1$$

$$y = 1x + b \quad 14 = 1(29) + b$$

$$b = -15 \quad 14 = 29 + b$$

$$y = 1x - 15$$

$$29 \leq x \leq 33$$

$$\frac{18-14}{41-45} = \frac{4}{-4} = -1$$

$$y = -1x + b$$

$$b = 59$$

$$18 = -1(41) + b$$

$$18 = -41 + b$$

$$y = -1x + 59$$

$$41 \leq x \leq 45$$

DE-Do

DE(33,18) Do(37,14)

$$\frac{18-14}{33-37} = \frac{4}{-4} = -1$$

$$y = -1x + b \quad 18 = -1(33) + b$$

$$b = 51 \quad 18 = -33 + b$$

$$\frac{+33}{51}$$

$$y = -1x + 51$$

$$33 \leq x \leq 37$$

E0-FG E0(45,14) FG(49,18)

$$\frac{14-18}{45-49} = \frac{-4}{-4} = 1$$

$$y = 1x + b$$

$$b = -31$$

$$14 = 1(45) + b$$

$$14 = 45 + b$$

$$y = 1x - 31$$

$$45 \leq x \leq 49$$

$$\frac{45}{-14}$$

$$\frac{31}{31}$$

FG-FH

FG(49,18) FH(52,4)

$$\frac{83}{3} \cdot \frac{49}{1} = \frac{196}{3}$$

$$\frac{4}{-3} \cdot \frac{49}{1} = \frac{196}{-3}$$

$$83 \frac{1}{3} = \frac{250}{3}$$

$$\frac{18-4}{49-52} = \frac{14}{-3}$$

$$y = \frac{4}{3}x + b$$

$$18 = \frac{4}{3}(49) + b$$

$$18 = \frac{196}{3} + b$$

$$b = \frac{250}{3}$$

$$83 \frac{1}{3}$$

$$y = \frac{4}{3}x + \frac{250}{3}$$

$$49 \leq x \leq 52$$

CK-CN CK(29,27) CN(32,30)

$$\frac{27-30}{29-32} = \frac{-3}{-3} = 1$$

$$y = 1x + b$$

$$b = -2$$

$$30 = 1(32) + b$$

$$30 = 32 + b$$

$$-32 \quad -32$$

$$y = 1x - 2$$

$$29 \leq x \leq 32$$

CV-CT

CV(23,27) CT(25,30)

$$\frac{3}{2} \cdot \frac{23}{1} = \frac{69}{2}$$

$$\frac{27-30}{23-25} = \frac{-3}{-2} = \frac{3}{2}$$

$$y = \frac{3}{2}x + b$$

$$27 = \frac{3}{2}(23) + b$$

$$27 = \frac{69}{2} + b$$

$$b = -\frac{15}{2}$$

$$y = \frac{3}{2}x - \frac{15}{2}$$

$$23 \leq x \leq 25$$

CL-CM CL(31,27) CM(33,30)

$$\frac{30-27}{33-31} = \frac{3}{2}$$

$$b = -\frac{39}{2}$$

$$27 = \frac{3}{2}(31) + b$$

$$27 = \frac{93}{2} + b$$

$$y = \frac{3}{2}x - \frac{39}{2}$$

$$31 \leq x \leq 33$$

CU-CQ

CU(25,27) CQ(28,30)

$$\frac{27-30}{25-28} = \frac{-3}{-3} = 1$$

$$y = 1x + b$$

$$b = 2$$

$$30 = 1(28) + b$$

$$30 = 28 + b$$

$$-28 \quad -28$$

$$y = 1x + 2$$

$$25 \leq x \leq 28$$

CJ-DA CJ(31,24) DA(33,26)

$$\frac{24-26}{31-33} = \frac{-2}{-2} = 1$$

$$y = 1x + b$$

$$b = -7$$

$$24 = 1(31) + b$$

$$24 = 31 + b$$

$$-31 \quad -31$$

$$y = 1x - 7$$

$$31 \leq x \leq 33$$

CH-DB

CH(31,21) DB(33,23)

$$\frac{21-23}{31-33} = \frac{-2}{-2} = 1$$

$$y = 1x + b \quad 21 = 1(31) + b$$

$$b = -10 \quad 21 = 31 + b$$

$$-31 \quad -31$$

$$y = 1x - 10$$

$$31 \leq x \leq 33$$

BZ-DI BZ(31,10) DI(33,8)

$$\frac{10-8}{31-33} = \frac{2}{-2} = -1$$

$$y = -1x + b \quad 10 = -1(31) + b$$

$$b = 41 \quad 10 = -31 + b$$

$$+31 \quad +31$$

$$y = -x + 41$$

$$31 \leq x \leq 33$$

CF-DC

CF(31,18) DC(33,20)

$$\frac{18-20}{31-33} = \frac{-2}{-2} = 1$$

$$y = 1x + b \quad 18 = 1(31) + b$$

$$b = -13 \quad 18 = 31 + b$$

$$-31 \quad -31$$

$$y = 1x - 13$$

$$31 \leq x \leq 33$$

BW-BV BW(31,7) BV(33,4)

$$\frac{7-4}{31-33} = \frac{3}{-2}$$

$$y = \frac{3}{-2}x + b \quad 4 = \frac{3}{-2}(33) + b$$

$$\frac{4}{1} + \frac{99}{2} = \frac{8+99}{2} = \frac{107}{2} \quad 4 = \frac{-99}{2} + b$$

$$b = \frac{107}{2} \quad +\frac{99}{2}$$

$$y = \frac{3}{-2}x + \frac{107}{2}$$

$$31 \leq x \leq 33$$

CB-DH

CB(31,13) DH(33,11)

$$\frac{13-11}{31-33} = \frac{2}{-2} = -1$$

$$y = -1x + b \quad 11 = -1(33) + b$$

$$b = 44 \quad 11 = -33 + b$$

$$+33 \quad +33$$

$$y = -1x + 44$$

$$31 \leq x \leq 33$$

BX-BU BX(29,7) BU(32,4)

$$\frac{7-4}{29-32} = \frac{3}{-3} = -1$$

$$y = -1x + b \quad 7 = -1(29) + b$$

$$b = 36 \quad 7 = -29 + b$$

$$+29 \quad +29$$

$$y = -1x + 36$$

$$29 \leq x \leq 32$$

BN-BQ

BN(25, 7) BQ(28, 4)

$$\frac{7-4}{25-28} = \frac{3}{-3} = -1$$

$$y = -1x + b \quad 7 = -1(25) + b$$
$$b = 32 \quad 7 = -25 + b$$
$$+25 \quad +25$$

$$\boxed{y = -x + 32}$$
$$\boxed{25 \leq x \leq 28}$$

DZ-DR DZ(40, 25) DR(38, 21)

$$\frac{25-21}{40-38} = \frac{4}{2} = 2$$

$$y = 2x + b \quad 25 = 2(40) + b$$
$$b = -55 \quad 25 = 80 + b$$
$$-80 \quad -80$$

$$\boxed{y = 2x - 55}$$
$$\boxed{38 \leq x \leq 40}$$

BM-BO

BM(23, 7) BO(25, 4)

$$\frac{3 \cdot 25 - 75}{0 \cdot 1 - 1 \cdot -2} = \frac{75 - 75}{0 + 2} = \frac{0}{2} = 0$$

$$\frac{7-4}{23-25} = \frac{3}{-2}$$

$$y = -\frac{3}{2}x + b \quad 4 = -\frac{3}{2}(25) + b$$
$$4 = -\frac{75}{2} + b$$
$$+ \frac{75}{2} \quad + \frac{75}{2}$$

$$b = \frac{83}{2}$$

$$\boxed{y = -\frac{3}{2}x + \frac{83}{2}}$$
$$\boxed{23 \leq x \leq 25}$$

EC-EJ EC(43, 25) EJ(41, 20)

$$\frac{25-20}{43-41} = \frac{5}{2}$$

$$\frac{20 - 205}{1 - 2} = \frac{40 - 205}{2} = \frac{-165}{2}$$

$$y = \frac{5}{2}x + b$$

$$b = -\frac{165}{2}$$

$$20 = \frac{5}{2}(41) + b$$

$$20 = \frac{205}{2} + b$$

$$- \frac{205}{2} \quad - \frac{205}{2}$$

$$\boxed{y = \frac{5}{2}x - \frac{165}{2}}$$
$$\boxed{41 \leq x \leq 43}$$

DX-DU

DX(37, 25) DU(35, 21)

$$\frac{25-21}{37-35} = \frac{4}{2} = 2$$

$$y = 2x + b \quad 21 = 2(35) + b$$

$$b = -49 \quad 21 = 70 + b$$
$$-70 \quad -70$$

$$\boxed{y = 2x - 49}$$
$$\boxed{35 \leq x \leq 37}$$

DL-GO DL(35, 11) GO(37, 7)

$$\frac{11-7}{35-37} = \frac{4}{-2} = -2$$

$$11 = -2(35) + b$$

$$y = -2x + b$$

$$81 = b$$

$$11 = -70 + b$$

$$+70 \quad +70$$

$$\boxed{y = -2x + 81}$$
$$\boxed{35 \leq x \leq 37}$$

GN-GM

GN(38,11) GM(40,7)

$$\frac{11-7}{38-40} = \frac{4}{-2} = -2$$

$$y = -2x + b \quad 7 = -2(40) + b$$

$$87 = b \quad 7 = -80 + b$$

$$+80 \quad +80$$

$$y = -2x + 87$$

$$38 \leq x \leq 40$$

ET-ES ET(45,32) ES(46,30)

$$\frac{32-30}{45-46} = \frac{2}{-1} = -2$$

$$y = -2x + b \quad 32 = -2(45) + b$$

$$b = 122 \quad 32 = -90 + b$$

$$+90 \quad +90$$

122

$$y = -2x + 122$$

$$45 \leq x \leq 46$$

GQ-GJ

GQ(41,12) GJ(43,7)

$$\frac{12-7}{41-43} = \frac{5}{-2} = \frac{5}{-2} \cdot \frac{41-205}{1-2}$$

$$y = \frac{5}{-2}x + b \quad 12 = \frac{5}{-2}(41) + b$$

$$b = \frac{229}{2} \quad 12 = \frac{205}{-2}x + b$$

$$+ \frac{205}{2} \quad + \frac{205}{-2}$$

$$y = \frac{5}{-2}x + \frac{229}{2}$$

$$41 \leq x \leq 43$$

EW-EX EW(49,35) EX(50,33)

$$\frac{35-33}{49-50} = \frac{2}{-1} = -2$$

$$y = -2x + b \quad 33 = -2(50) + b$$

$$b = 133 \quad 33 = -100 + b$$

$$+100 \quad +100$$

$$y = -2x + 133$$

$$49 \leq x \leq 50$$

EU-EV

EU(45,33) EV(46,35)

$$\frac{33-35}{45-46} = \frac{-2}{-1} = 2$$

$$y = 2x + b \quad 33 = 2(45) + b$$

$$b = 57 \quad 33 = 90 + b$$

$$-90 \quad -90$$

$$y = 2x + 57$$

$$45 \leq x \leq 46$$

EY-EZ EY(50,32) EZ(49,30)

$$\frac{32-30}{50-49} = \frac{2}{1} = 2$$

$$y = 2x + b \quad 32 = 2(50) + b$$

$$b = 68 \quad 32 = 100 + b$$

$$-100 \quad -100$$

$$y = 2x + 68$$

$$49 \leq x \leq 50$$

FQ-FP FQ(46,6) FP(45,4) FK-FL FK(50,3) FL(49,1)

$$\frac{6-4}{46-45} = \frac{2}{1} = 2$$

$$y = 2x + b \quad 4 = 2(45) + b$$
$$b = -86 \quad 4 = 90 + b$$
$$-90 \quad -90$$

$$\boxed{y = 2x - 86}$$
$$\boxed{45 \leq x \leq 46}$$

$$\frac{3-1}{50-49} = \frac{2}{1} = 2$$

$$y = 2x + b \quad 3 = 2(50) + b$$
$$b = -97 \quad 3 = 100 + b$$
$$-100 \quad -100$$

$$\boxed{y = 2x - 97}$$
$$\boxed{49 \leq x \leq 50}$$

FO-FV FO(45,3) FV(46,1)

$$\frac{3-1}{45-46} = \frac{2}{-1} = -2$$

$$y = -2x + b \quad 3 = -2(45) + b$$
$$b = 93 \quad 3 = -90 + b$$
$$+90 \quad +90$$

$$\boxed{y = -2x + 93}$$
$$\boxed{45 \leq x \leq 46}$$

FI-FJ FI(49,6) FJ(50,4)

$$\frac{6-4}{49-50} = \frac{2}{-1} = -2$$

$$y = -2x + b \quad 4 = -2(50) + b$$
$$b = 104 \quad 4 = -100 + b$$
$$+100 \quad +100$$

$$\boxed{y = -2x + 104}$$
$$\boxed{49 \leq x \leq 50}$$

Parallel Lines

$$A-B: y = x + 25$$

$$AQ-AO: y = x - 14$$

The lines A-B and AQ-AO are parallel because they have the same slope, but different y-intercepts. Both lines have a slope of 1. Line A-B has a y-intercept of 25. However, the line AQ-AO has a y-intercept of -14. That is why these lines are parallel.

Perpendicular

$$D-C: y = x + 16$$

$$AM-AN: y = -x + 8$$

The lines D-C and AM-AN are perpendicular because their slopes are the negative reciprocal of each other. The line D-C has a slope of 1, while AM-AN has a slope of -1. The negative reciprocal of 1 is -1. That is why these lines are perpendicular.

Reflection Piece

While doing this project, I learned many things. I learned how to find the slopes of many lines. I learned how find the x-intercept and the y-intercept easily. I also learned how to use a new computer program used for graphing. I learned how you can combine art and math to create something very cool.

This project was helpful in many ways. It helped me a lot on tests and quizzes. I am pretty sure that it is going to help me on my CST. It is also helped me become better in math in many ways.

My favorite part about this project was sewing the picture on the foam core board. I also liked it when we had the choice to draw whatever picture we wanted. My least favorite part was having to write all the equations on google docs.

The thing that I will do differently was to not leave it until the last minute. I did that and I had to stay past midnight trying to finish this project. I would of also chosen an easier picture because the picture that I did had a lot of lines. They took a very long time to put in the computer.

I don't really have a reason for creating this image really. I was only drawing the top part of my picture, but then I thought that it was too simple so I thought of a city reflecting water.

Thank you Mr.Huynh for giving us an oppportunity to be part of this wonderful project. I really enjoyed doing this project.