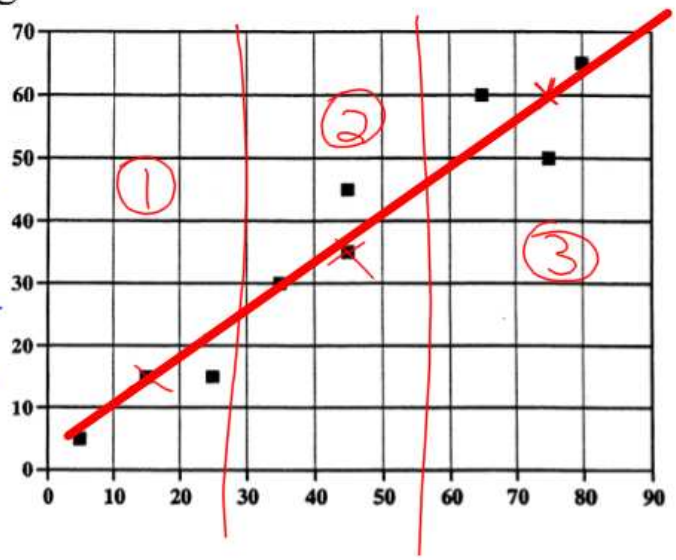
Day 8: Med-Med Method

Steps to determine the med-med line of best fit:

a. Draw a scatterplot.
b. Divide the graph into 3 equal sections. If you cannot, then make sure the outside sections have equal amount of points. Eg. 9 data points 3-3-3, 10 data points 3-4-3, 20 data points 7-6-7.
c. Determine the median point in each section (find median of x coordinates and median of y coordinates - ensure students know median is simply the middle number!!).
d. Plot the median points on a scatterplot with 'x's.
e. Use a ruler and join 2 outside median points then slide the ruler 1/3 of the way toward the middle median point. Then draw the line of best fit.
f. Calculate the equation of the line of best fit.

Eg 1) Find the equation of the med-med line of best fit for the following data:

X	Y	
5	5	
15	18	①
25	18	
35	30	
45	35	②
45	45	
65	60	
75	50	③
80	65	



(15, 18)

(75, 60)

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{60-18}{75-15} = \frac{42}{60} = 0.7$

$y = mx + b$

$y = 0.7x + b$

$18 = 0.7(15) + b$

$18 = 10.5 + b$

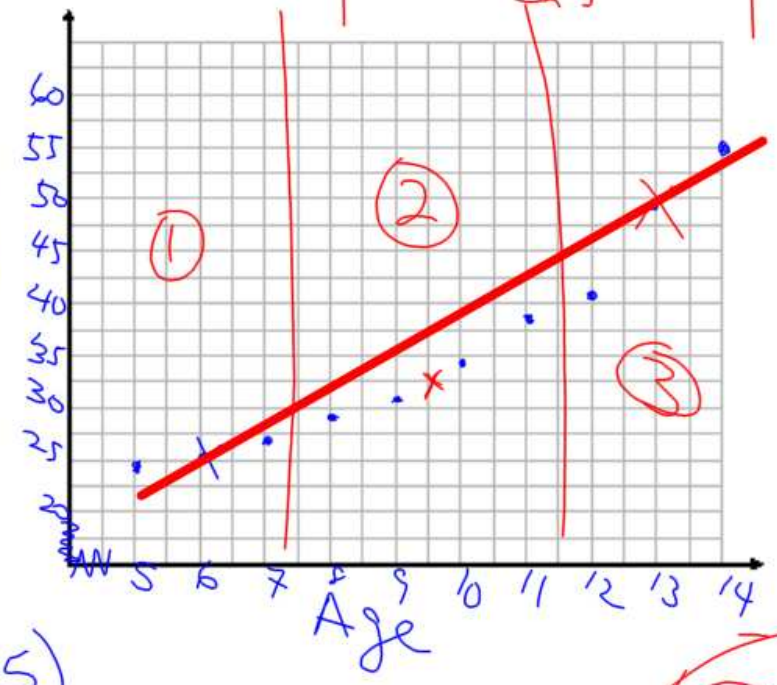
$-10.5 \quad -10.5$

$b = 7.5$

$y = 0.7x + 7.5$

Eg 2) Find the med-med line of best fit by hand:

Age (yrs)	5	6	7	8	9	10	11	12	13	14
Mass (kg)	24	25	27	28	31	34	38	41	47	55



(6, 25)
(13, 47)

(6, 25)
(13, 47)

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$m = \frac{47-25}{13-6} = \frac{22}{7} = 3.14$

$25 = 3.14(6) + b$

$25 = 18.84 + b$

$b = 6.16$

$y = 3.14x + 6.16$

Eg 3) For the data to the right, use the calculator to generate the med-med line of best fit equation. Follow the steps in utility 13 at the back of the text for instructions.

x	y
4	23
5.2	28
5.8	29
6.5	35
7.2	35
8.3	40
8.9	42
9.7	50
10.1	47
11.2	52
11.9	60
12.5	58
13.1	64