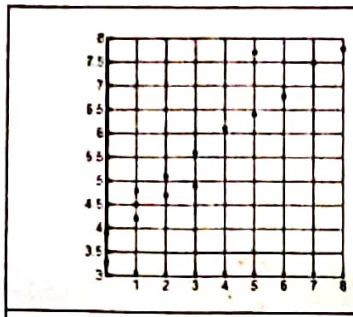
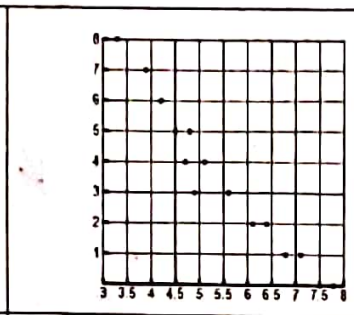
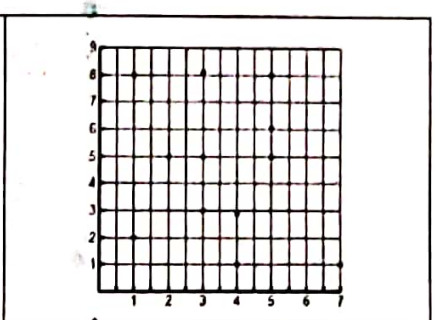
Scatter Plots & Lines of Best Fit

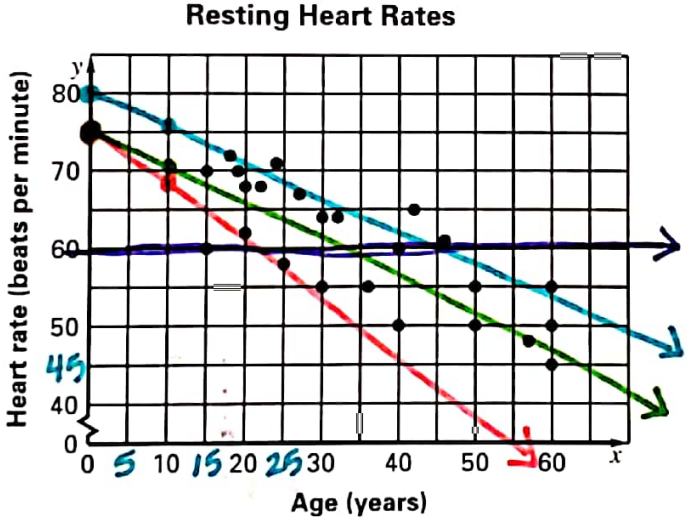
✓ A Scatter plot *is used to investigate the relationship between two variables.*

✓ Correlation *(or trend) means how the points in the scatter plot are related to each other. Examples:*

		
Positive Correlation	Negative Correlation	No Correlation

If there is a trend in the data, a LINE OF BEST FIT (or trend line) can be used to represent the data.

Example: The data in the graph shows the resting heart rates and ages of 24 students in an aerobics class. Graph the four equations on the grid. Choose the one that best represents the data.



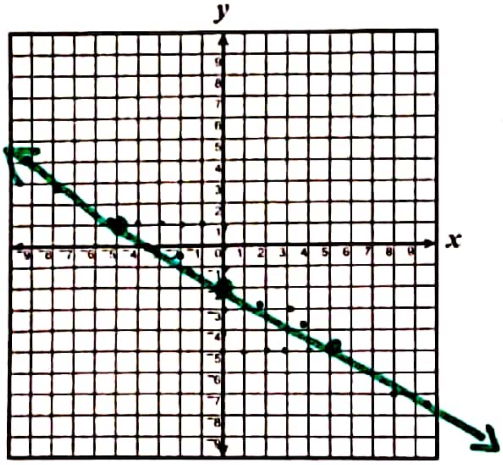
- A. $y = -\frac{2}{5}x + 80$
- B. $y = -\frac{2}{5}x + 75$
- C. $y = 60$
- D. $y = -\frac{3}{5}x + 75$

Which equation seems to best represent the data? Why?

Line B because . . .

Determine which equation best matches the data on the following graphs.

1.



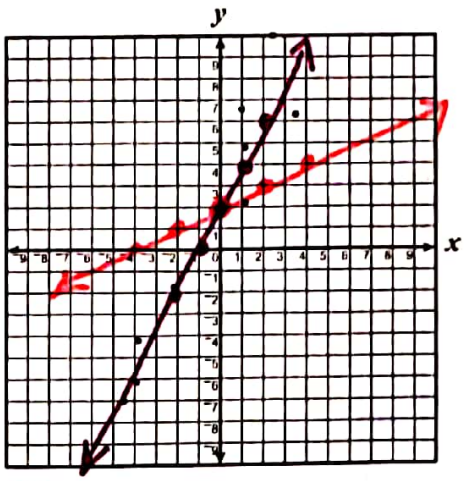
A. $y = \frac{3}{5}x - 2$

C. $y = -\frac{3}{5}x - 2$

B. $y = \frac{5}{3}x - 2$

D. $y = -\frac{5}{3}x - 2$

2.



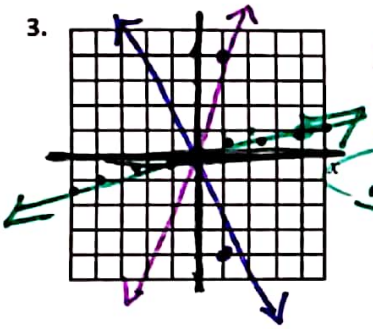
A. $y = 2x + 2$

B. $y = \frac{1}{2}x + 2$

C. $y = -2x + 2$

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

3.



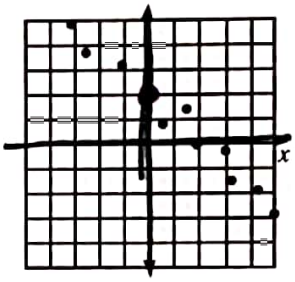
A. $y = 4x$

B. $y = -4x$

C. $y = \frac{1}{4}x$

D. $y = -\frac{1}{4}x$

4.



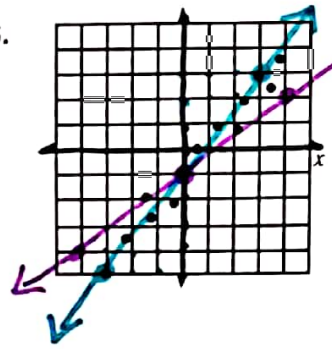
A. $y = x + 2$

B. $y = -x + 2$

C. $y = x - 2$

D. $y = -x - 2$

5.



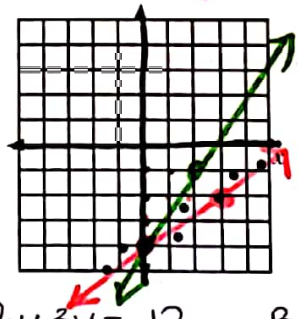
A. $y = \frac{3}{4}x - 1$

B. $y = \frac{4}{3}x - 1$

C. $y = -\frac{3}{4}x - 1$

D. $y = -\frac{4}{3}x - 1$

6.



A. $2x + 3y = -12$

B. $2x - 3y = 12$

C. $3x + 2y = -8$

D. $3x - 2y = 8$

C. $3x + 2y = -8$

$-3x \quad -3x$

$\frac{2y}{2} = \frac{-3x - 8}{2}$

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

D. $3x - 2y = 8$

$-3x \quad -3x$

$\frac{-2y}{-2} = \frac{-3x + 8}{-2}$

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

A. $2x + 3y = -12$

$-2x \quad -2x$

$\frac{3y}{3} = \frac{-2x - 12}{3}$

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

B. $2x - 3y = 12$

$-2x \quad -2x$

$\frac{-3y}{-3} = \frac{-2x + 12}{-3}$

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