

5.3 Correlation

PRACTICE

MATCHING – Match the r value to the graph

1. $r = 0.5$ matches graph _____

2. $r = 0.8$ matches graph _____

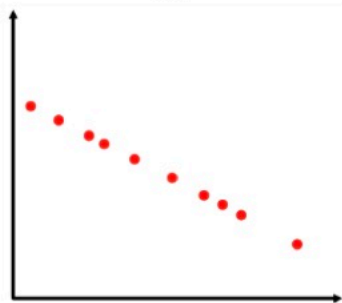
3. $r = -1$ matches graph _____

4. $r = 0$ matches graph _____

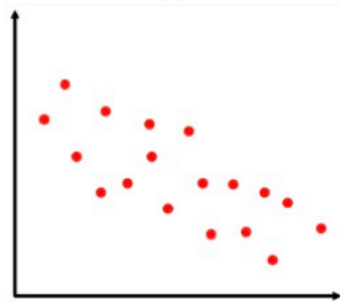
5. $r = -0.3$ matches graph _____

6. $r = -0.6$ matches graph _____

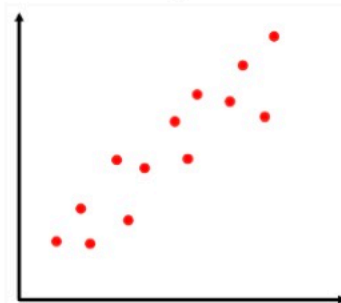
A



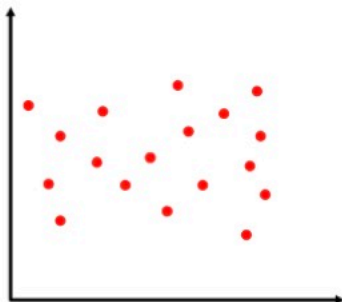
B



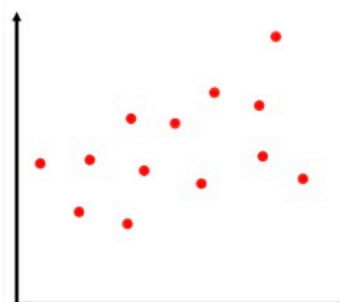
C



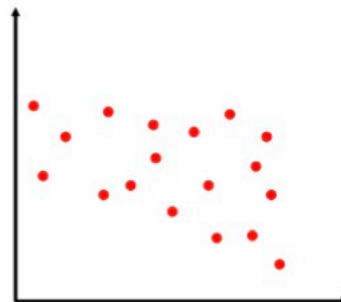
D



E



F



Use a sentence to explain the meaning of the slope and y-intercept of the best fit line for each situation.

7. Sully, Kelly, and Bean are keeping track of their money over time where x stands for time in months and y stands for money in dollars.

SULLY $y = \frac{40}{3}x + 500$ slope = _____
 y-intercept = _____

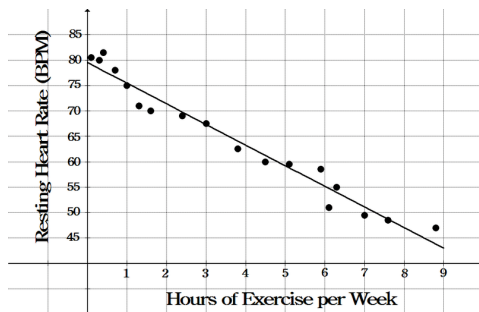
KELLY $y = -60x + 200$ slope = _____
 y-intercept = _____

BEAN $y = 25.75x + 400$ slope = _____
 y-intercept = _____

Use the graph and the equation of the best fit line to answer the following.

8. a. Use a sentence to explain the meaning of the slope of the best fit line.

$r = -4h + 79$



b. Use a sentence to explain the meaning of the y-intercept of the best fit line.

c. Use the equation of the best fit line to predict resting heart rate of a person with 8 hours of exercise per week.

d. Circle the best estimate of the r -value of the best fit line.

- $r = -.75$ $r = -0.5$ $r = 0$ $r = 0.5$ $r = 0.75$

Use the data to find the best fit linear regression and correlation coefficient. Round to nearest hundredth.

9.

x	y
10	-2
11	-1.5
16	1
7	-3.5
4	-5
-5	-9.5
1	-6.5
-3	-8.5

EQUATION

Correlation Coefficient

Explain the meaning of the correlation coefficient.

10.

x	y
6.1	19.3
8.7	6.1
9.9	3.2
10.1	3.5
11	2.8
12.9	1.5
15.1	0.3
17.3	0.1

EQUATION

Correlation Coefficient

Explain the meaning of the correlation coefficient.

Use the data to answer the following.

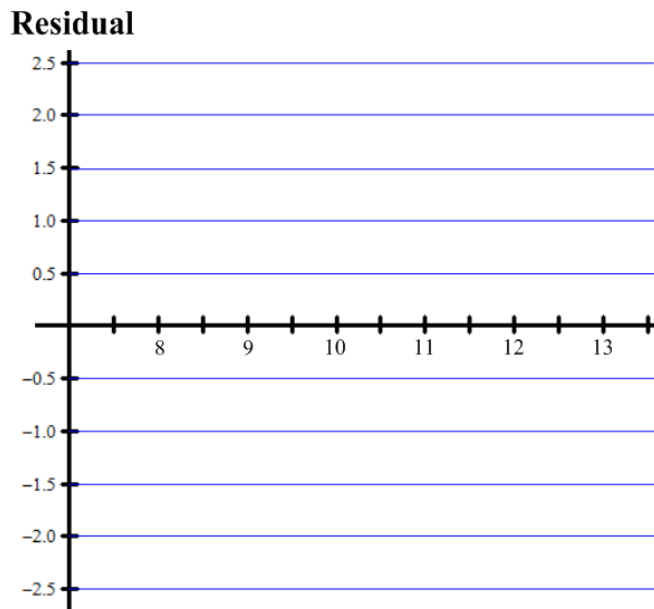
18. The table below shows the shoe sizes and height (in inches) for men.

a. Find the equation for the line of best fit and the correlation coefficient. (Round to nearest hundredth)

EQUATION: _____ CORRELATION COEFFICIENT: _____

b. Complete the table and create a residual plot.

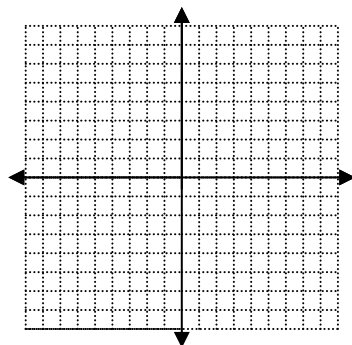
Shoe Size x	Height y	Predicted Height	Residual
8.5	66		
9	68.5		
9	67.5		
9.5	70		
10	70		
10	72		
10.5	71.5		
10.5	69.5		
11	71.5		
11	72		
11	73		
12	73.5		
12	74		
12.5	74		



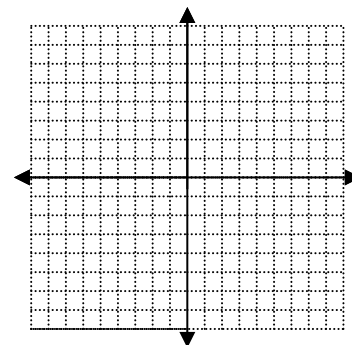
c. Using the residual plot and correlation coefficient, is the prediction line a good model for the data? Explain.

Graph the following.

19. $y > 5 - x$



20. $2x - 3y = 12$
 $x = -3$



Solve the following.

21. $4 - 3(2y - 3) = -5$

22. $4 - \frac{x}{3} = 7$

23. $2x - 3y = -7$
 $y = x + 1$