Name:_____ Period:_____
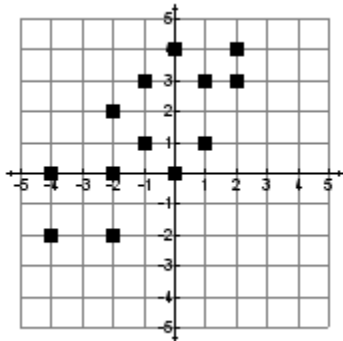
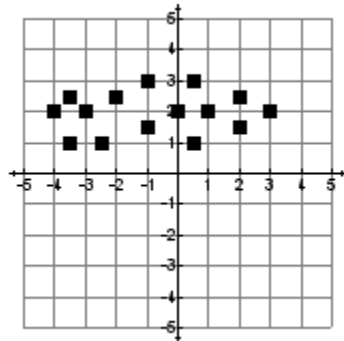# HW 5-3: Scatter Plots & Lines of Best Fit

For each of the following scatter plots:
a. state whether it is linear or non-linear
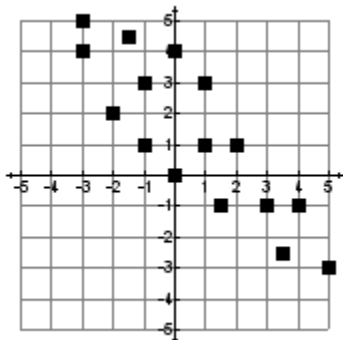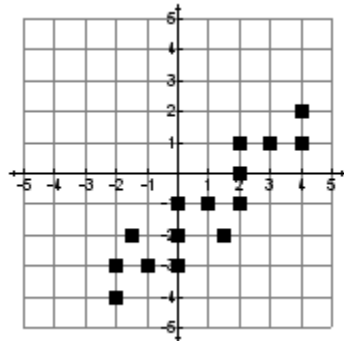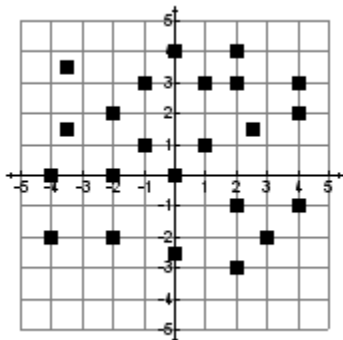**b. state whether there is a positive, negative or no correlation.**

1.

_____

2.

_____

3.
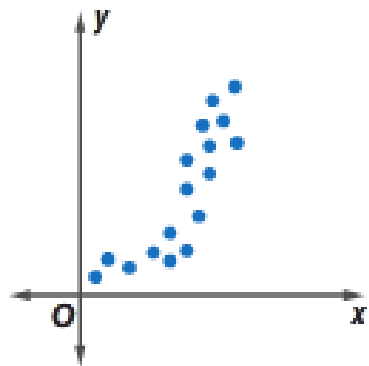

_____

4.

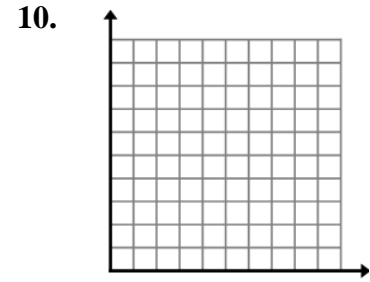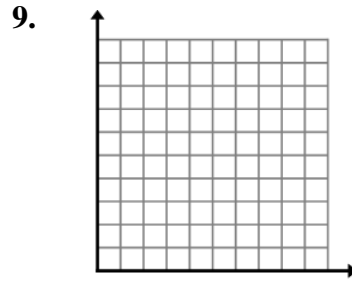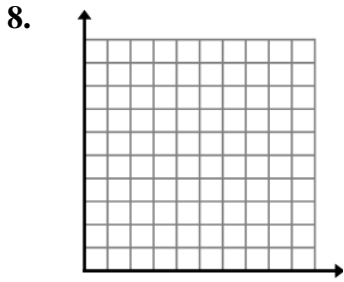
_____

5.

_____

6.

_____

7. If you are looking at a scatter plot with a correlation, then there is a line called the _____
_____ that closely shows direction and relationship of the scatter plot.

Sketch a linear scatter plot showing positive, negative, and no correlation. Label each appropriately.

8.

_____

9.

_____

10.

_____

List a real life example for each correlation. You MAY NOT use an example discussed in class.
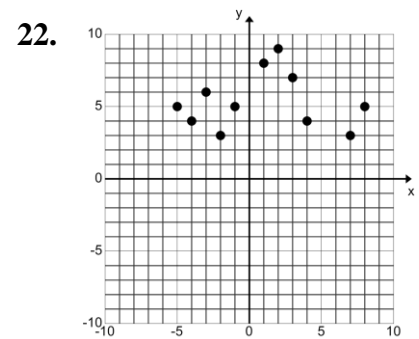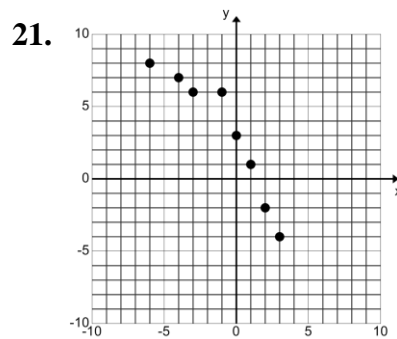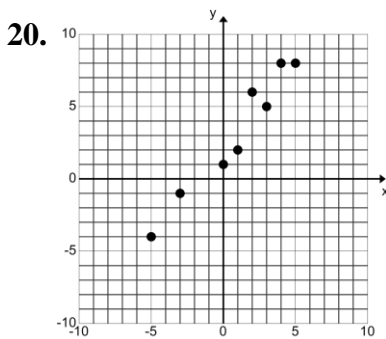
11. Positive Correlation_____

12. No Correlation_____

13. Negative Correlation_____

Tell if the two topics have a positive correlation, negative correlation, or no correlation.

14. The amount of deep fried food a person eats and their chances of getting heart disease.

15. Amount of exercise a person does in a single workout and the amount of energy they have after.

16. The number of pages in a book and how old your math teacher is.

17. The number of mistakes you make on a test and the time you put into studying for the test.

18. How many popular kids are in the school and the amount of soda pop consumed in Africa.

19. The effort you put into life (and school) and your chances of being successful.

Sketch the line of best fit and decide if the data has a positive, negative, or no correlation.

20.

Positive   Negative
No correlation

21.

Positive   Negative
No correlation

22.

Positive   Negative
No correlation

Use the given information from each table to make a scatter plot. Then state the type of correlation, draw your line of best fit, and label your axes (plural of axis).
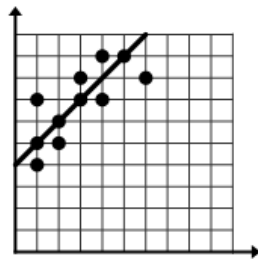
23. Fast Food Sales (in billions)

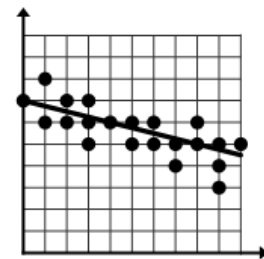| Year	Sales
1985	$46.4
1986	$49.4
1987	$57.6
1988	$65.0
1989	$68.3
1990	$74.2
1991	$77.0
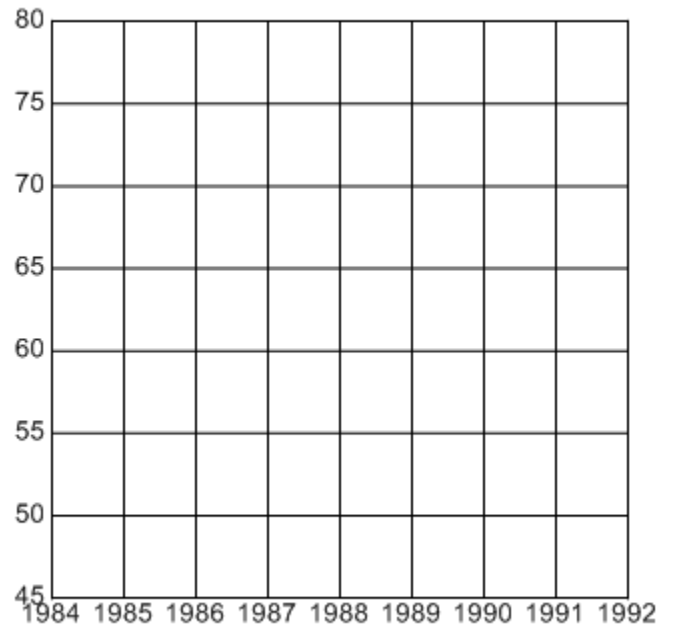
24. Predict what you think the fast food sales would be in 1995, based on your trend in the scatter plot.

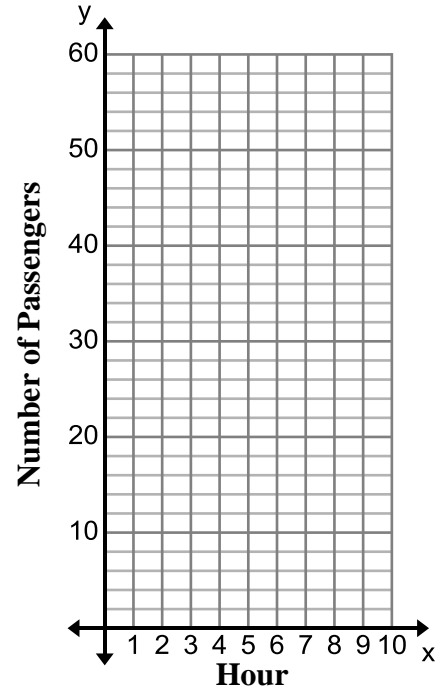Write the equation of the line of best fit for each scatter plot.

25.

26.

27. Rehan's yacht holds 70 passengers. Each hour he stops at the marina to let some passengers off and on. The table shows how many passengers are on board during each hour of boating.

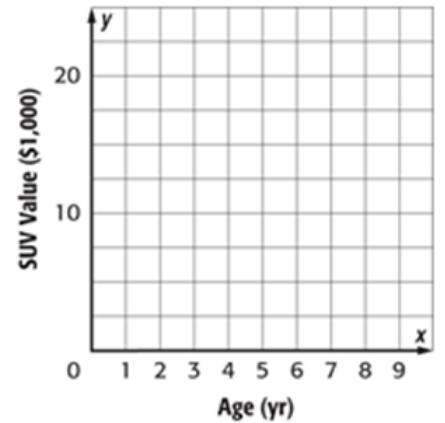| Hours	1	2	3	4	5
Passengers	30	40	32	40	55

Construct a scatter plot. Then draw the line of best fit.

28. The table shows the resale value of six SUV's plotted against the age of the vehicle.

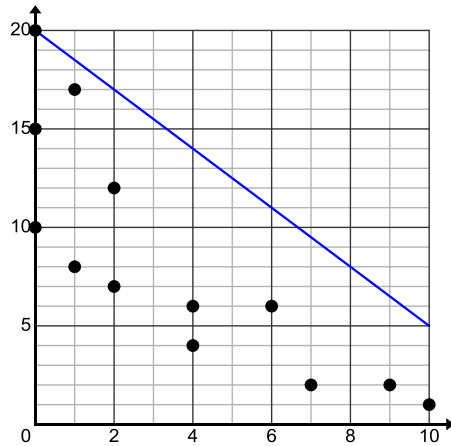| Age (yr)	1	2	3	4	5	6
Passengers	24	22	19	17	16	13

Construct a scatter plot. Then draw the line of best fit.
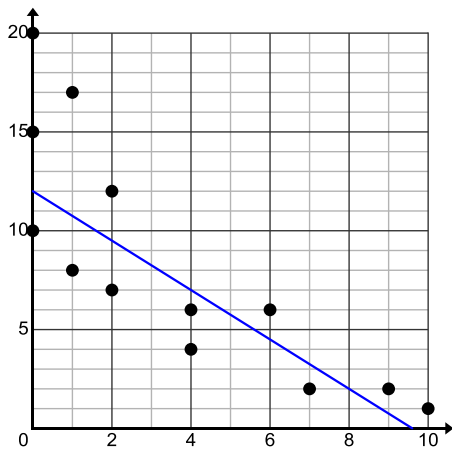
29. Which line is the line of best fit? (Each scatter plot is the same; the lines are different.)
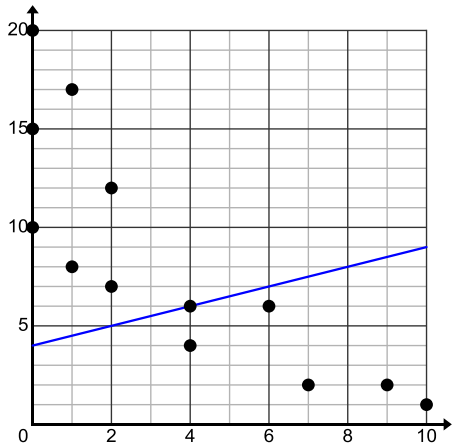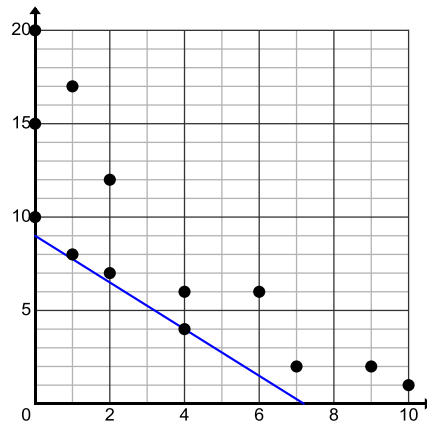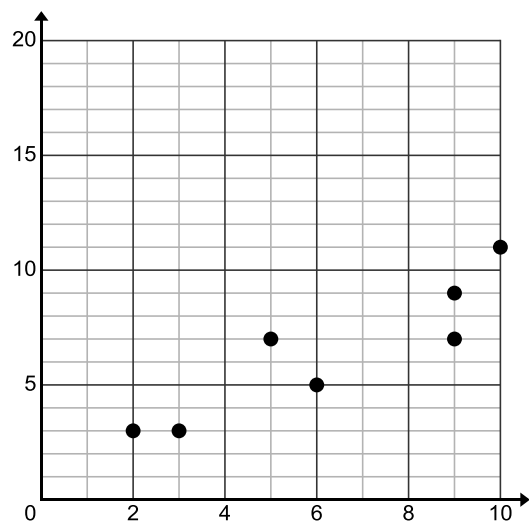

A

B

C

D

30. Which equation is the line of best fit for the following scatter plot?

A. $y = \dfrac{3}{4}x + 1$
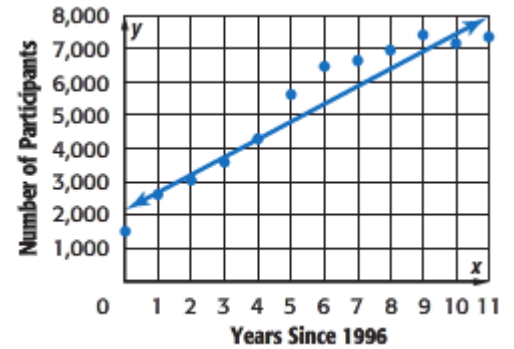
B. $y = \dfrac{3}{4}x + 4$

C. $y = \dfrac{1}{5}x + 2$

D. $y = \dfrac{1}{5}x + 6$

31. The scatter plot shows the number of girls who participate in ice hockey.

    a. Write an equation in slope-intercept form for the line of best fit that is drawn, and interpret the slope and y-intercept.

Number of Participants vs. Years Since 1996

    b. Use the equation to make a conjecture about the number of girls that will participate in ice hockey in 2020.

32. The scatter plot shows the average prices for a ticket to an NFL game.

Which of the following is the most reasonable equation for the line of best fit?

Ⓐ $y = \frac{1}{3}x + 34$ Ⓒ $y = 3x + 34$

Ⓑ $y = -\frac{1}{3}x + 34$ Ⓓ $y = -3x + 34$

Cost ($) vs. Years Since 1995