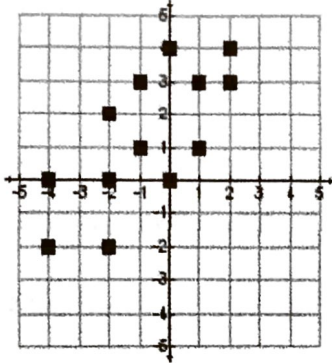


HW 5-3: Scatter Plots & Trend Lines

For each of the following scatter plots:

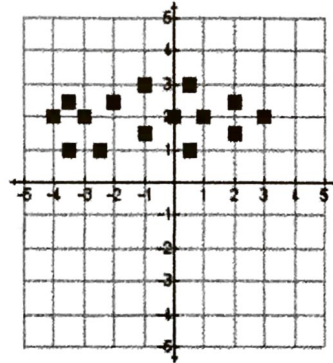
- state whether it is linear or non-linear
- state whether there is a positive, negative or no correlation.

1.

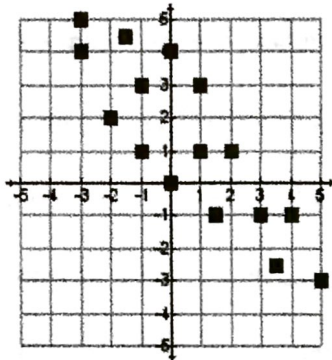


linear & positive

2.

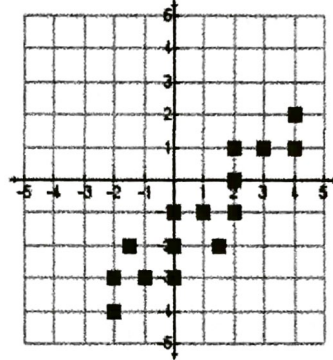


3.

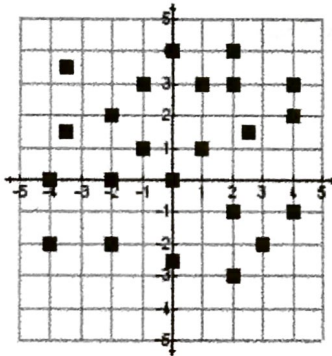


linear & negative

4.

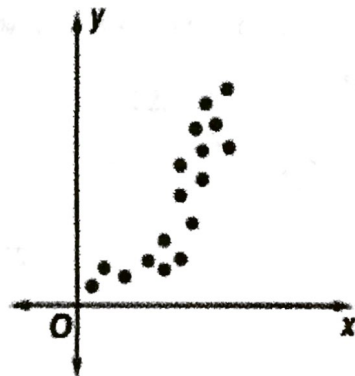


5.



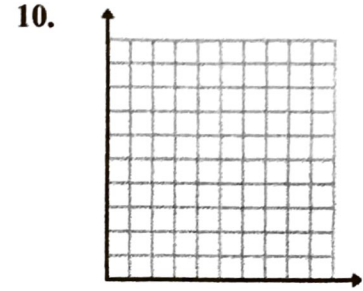
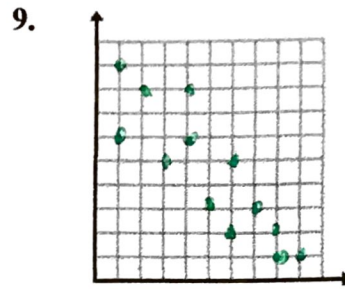
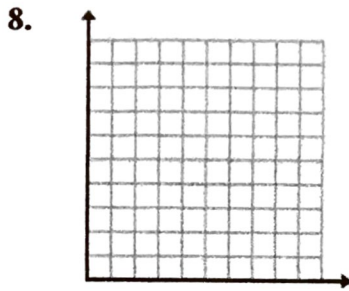
Non-linear & NO correlation

6.



7. If you are looking at a scatter plot with a correlation, then there is a line called the Line of Best Fit (or Trend line) that closely shows direction and relationship of the scatter plot.

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



Negative

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

11. Positive Correlation ** Answers may vary **

12. No Correlation _____

13. Negative Correlation ** Answers may vary **

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.

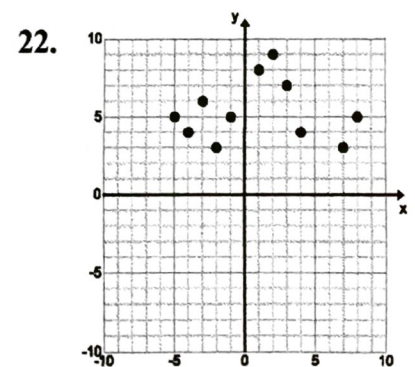
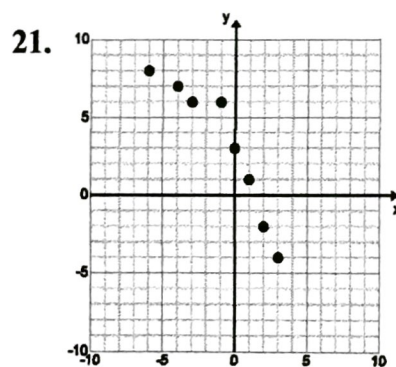
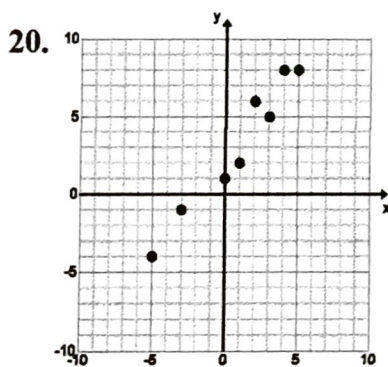
16. *Negative*
The number of pages in a book and how old your math teacher is.

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

18. *Negative*
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.

Positive
Sketch the trend line and decide if the data has a positive, negative, or no correlation.



Positive Negative
No correlation

Positive Negative
No correlation

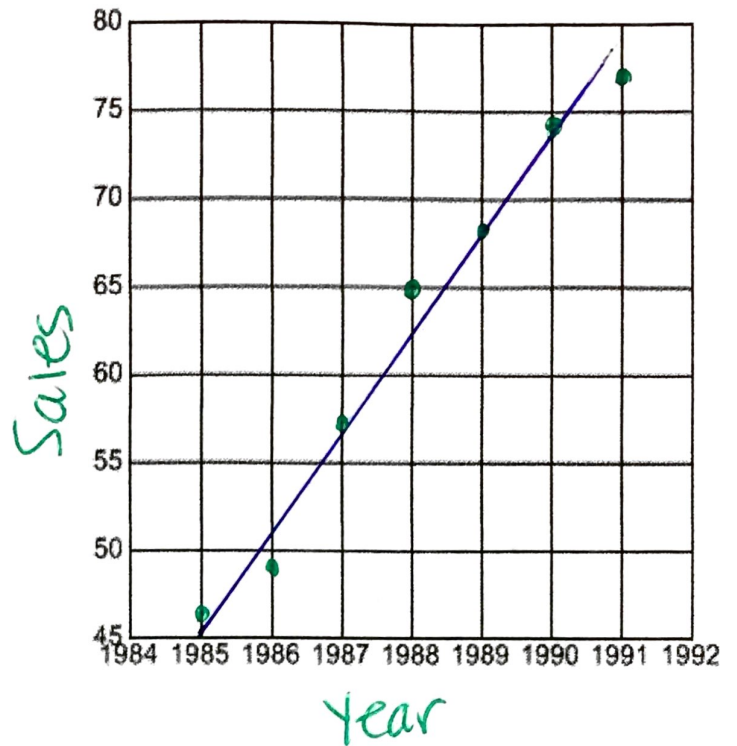
Positive Negative
No correlation

Use the given information from each table to make a scatter plot. Then state the type of correlation, draw your trend line, 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

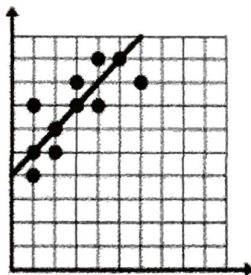
positive
correlation



24. Predict what you think the fast food sales would be in 1995, based on your trend in the scatter plot.

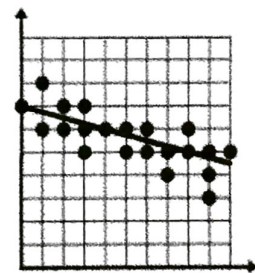
Write the equation of the trend line for each scatter plot.

25.



$$y = x + 4$$

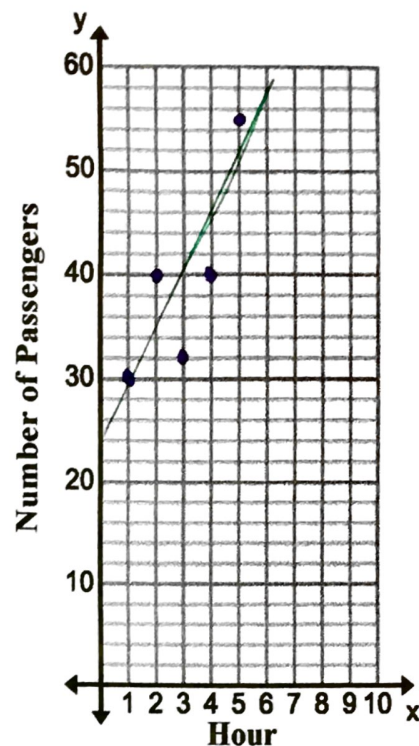
26.



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

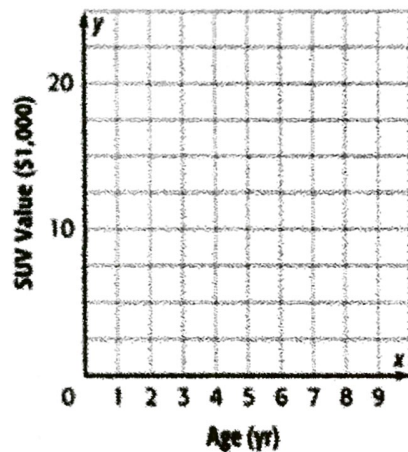
Construct a scatter plot. Then draw the trend line.



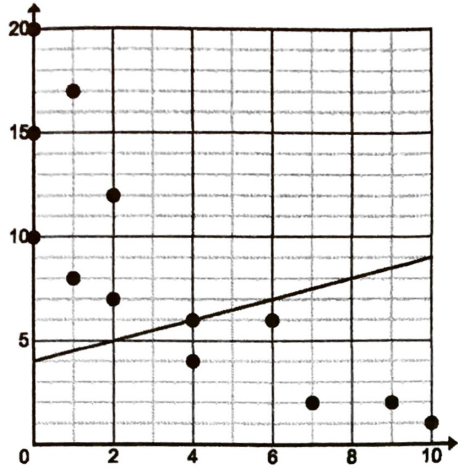
28. The table shows the resale value of six SUV's plotted against the age of the vehicle.

Age (yr)	1	2	3	4	5	6
SUV Value (in \$1000's)	24	22	19	17	16	13

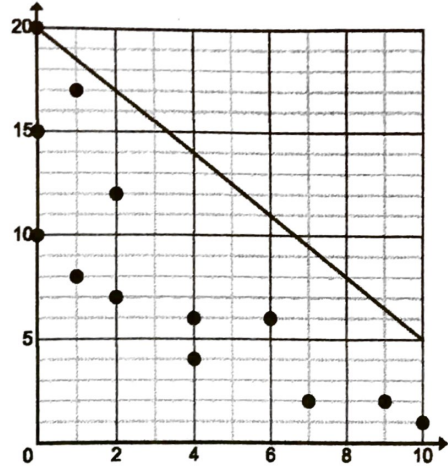
Construct a scatter plot. Then draw the trend line.



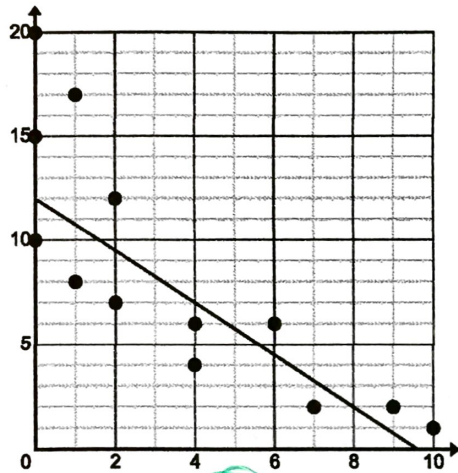
29. Which line is the best trend line? (Each scatter plot is the same; the lines are different.)



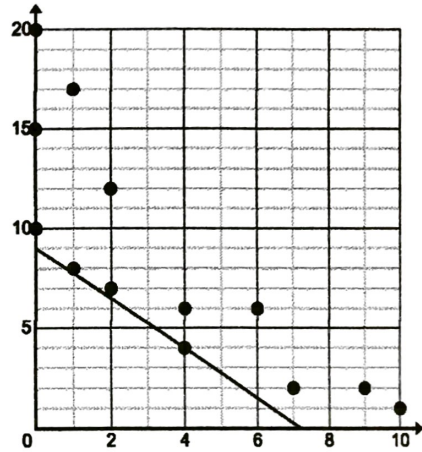
A



B



C



D

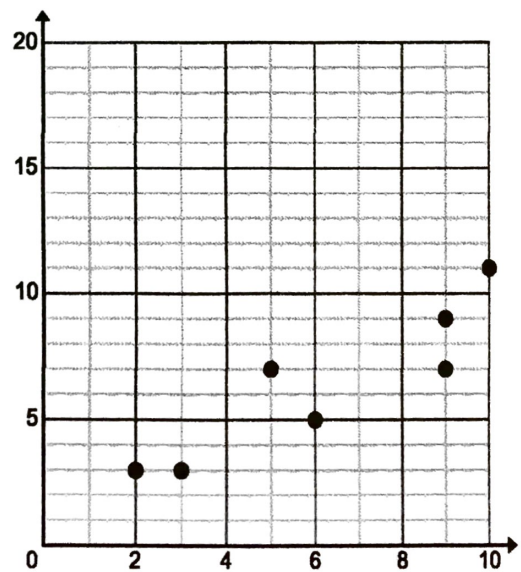
30. Which equation is the best trend line for the following scatter plot?

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

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

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

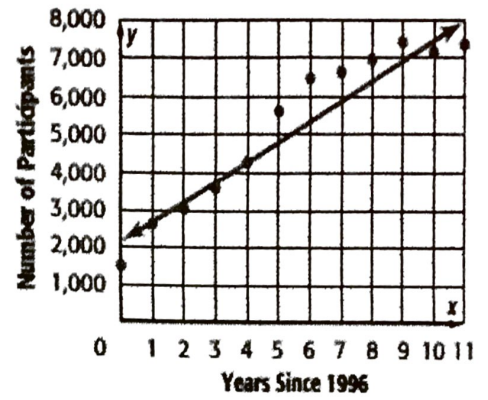
D. $y = \frac{1}{5}x + 6$



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

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

$$y = 500x + 2100$$



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

14,100 girls

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

Which of the following is the most reasonable equations for the trend line?

- (A) $y = \frac{1}{3}x + 34$ (C) $y = 3x + 34$
 (B) $y = -\frac{1}{3}x + 34$ (D) $y = -3x + 34$

