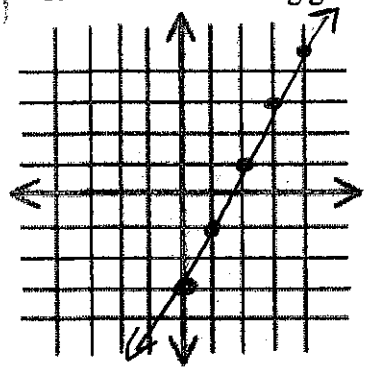
Unit 6 Study Guide (8-1 through 8-6) Name_____ Blk_____

1. Use the following grid to create a graph with an initial value of -3 and a slope of 2.



$b = -3$

$m = 2$

2. Write an algebraic equation that describes the relationship between the input and output in the following table.

Hours of Rental	Cost of Rental ($)
0	0
2	65
4	130
6	195
8	260
10	325

$m = \frac{\Delta y}{\Delta x} = \frac{65}{2}$

$m = \$32.50$

$b = 0$

$y = \$32.50x$

It costs $32.50 per hour to rent.

Use the two-way table shown below for questions 3 and 4.

	Likes classical music	Dislikes classical music	
Plays an instrument	15	2	17
Does not plays an instrument	3	25	
	18	27	

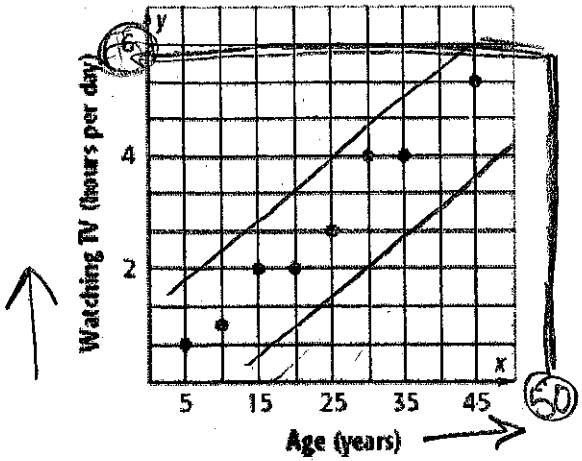
3. What is the relative frequency of the students who like classical music and play an instrument to the total number of students who play an instrument? Round to the nearest hundredth. ROW TOTAL

a. 0.12
b. 0.83
c. 0.88
d. 0.89

$\frac{15}{17} = .88$

4. Which of the following is a valid conclusion about the data?
a. Of the students that like classical music, most do not play an instrument
b. Of the students that play an instrument, most do not like classical music
c. There were a total of 45 students surveyed $15 + 3 + 2 + 25 = 45$ students total
d. Most of the students surveyed play an instrument – False

Use the scatter plot shown below for questions 5-7.

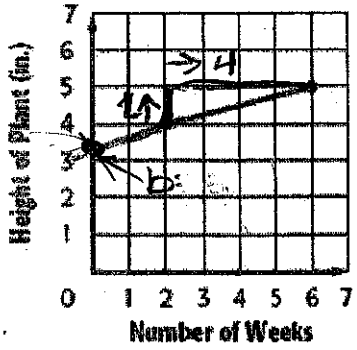


5. What type of association is shown in the scatter plot?
   a. A negative linear association'
   b. A positive linear association
   c. A positive nonlinear association
   d. No association

6. Which of the following statements is best supported by the scatter plot?
   a. As the age of a person increases, the time spent watching TV increases
   b. As the time spent watching TV increases, a person's age decreases
   c. As the age of a person increases, the time spent watching TV decreases
   d. There is no relationship between the age of a person and the amount of time spent watching TV

7. Which of the following is a reasonable estimate for the amount of TV watched per day for a person who is 50 years old?
   a. 6 hours/day
   b. 5 hours/day
   c. 4 hours/day
   d. 2 hours/day

8. A plant is a certain height. The height of the plant is measured for several weeks. The graph shows the height of the plant for each week. Which statement is true?

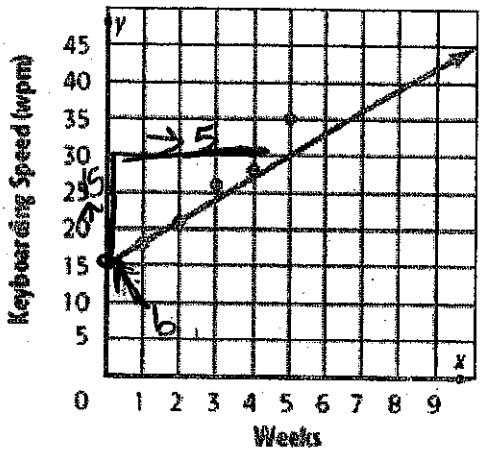


$m = \frac{1 \text{ in}}{4 \text{ weeks}}$

$b = 3.5$

   a. The plant grew 1 inch per week
   b. The plant grew 0.75 inch per week
   c. The initial height of the plant was 4 inches
   d. The initial height of the plant was 3.5 inches

Use the scatter plot below for questions 9 and 10. The scatter plot shows Bryan's keyboarding speed after a number of weeks of keyboarding class.



$m = \frac{\uparrow 5}{\rightarrow 5} = 3$

$b = 15$

$y = 3x + 15$

9. Which of the following is the most reasonable equation for the line of best fit?
   a. $y = 1.5x + 15$
   b. $y = -1.5x + 15$
   c. $y = -3x + 15$
   d. $y = 3x + 15$

10. Which of the following is the most reasonable estimate for Bryan's keyboarding speed after 15 weeks?
   a. 50 wpm
   b. 55 wpm
   c. 60 wpm
   d. 65 wpm

*use equation from #9

$y = 3(15) + 15$

$y = 45 + 15$

$y = 60$

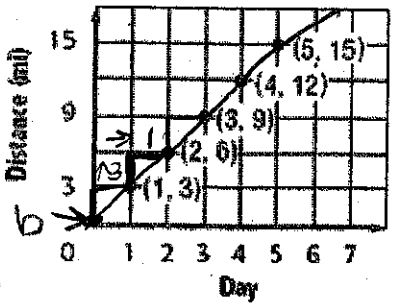
11. Graphs that represent situations that may not have numerical values are called?
   a. Linear
   b. Nonlinear
   c. Quadratic
   d. Qualitative

12. Student tickets cost \$5.75 each, and adult tickets cost \$8.50 each. Which equation can be used to find the total cost c of any number of adult tickets t?
   a. $c = 8.5t$
   b. $t = 8.5c$
   c. $c = 5.75t$
   d. $t = 5.75c$

$y = mx$

$C = 8.50t$

13. The graph below shows Lanna's total distance in miles for each day she is training for a marathon. What is her distance on day 10?



$b = 0$

$m = \frac{\uparrow 3}{1} = 3$

$y = 3x$

$y = 3(10)$

$y = 30$

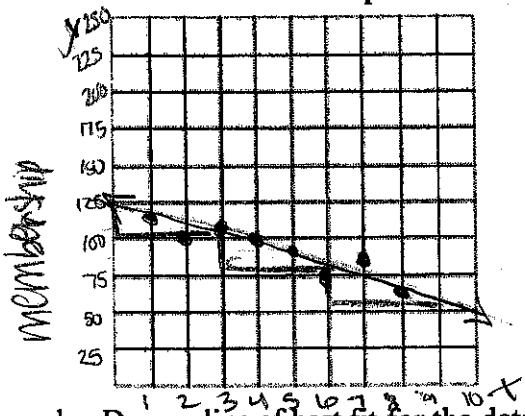
20

   a. 21 miles
   b. 27 miles
   c. 30 miles
   d. 33 miles

14. Use the data in the table below. The table shows the membership for a savings club in the years 2005-2012.

	2005	2006	2007	2008	2009	2010	2011	2012
X	**Years Since 2004**	1	2	3	4	5	6	7	8
Y	**Membership**	120	100	110	100	90	75	85	65

a. **Construct and interpret** a scatter plot for the data.



$m = -\frac{25}{3}$

$b = 125$

*answers will vary depending on scale used and line of best fit drawn.

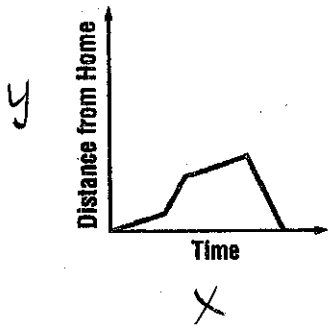
b. Draw a line of best fit for the data.

c. Write an equation in slope-intercept for the line of best fit. $y = -\frac{25}{3}x + 125$

d. Interpret the slope and y-intercept of the line of best fit $m = \frac{-25}{3}$ membership decreases by 25 every 3 years

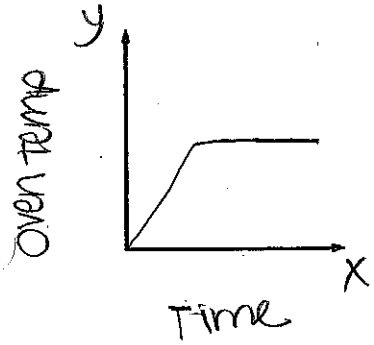
$b = 125$ membership began with 125 in 2004.

15. The graph below displays the distance Bryan was from home as he ran in preparation for a marathon. Describe the change in distance over time.



As he began to train he was a short distance from home, then he increased the distance rapidly, then the distance gradually continued to increase, then near the end he rapidly decreased the distance as he returned home.

16. An oven is being preheated in order to bake a cake. Sketch a qualitative graph to represent the temperature of the oven over time.



*gradually increasing until desired temperature is reached, then stays at desired temperature.