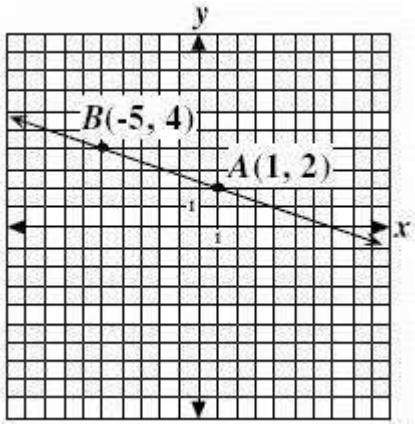
Unit 6 REVIEW: Linear Models and Tables Assessment – 8th Grade Math

1. Which equation describes the line through points A and B? *(Hint: The ordered pairs make which equation true when you substitute the values in for x and y?)*



A. x – 3y = -5
B. x + 3y = -5
C. x + 3y = 7
D. 3x + y = 5

2. The table below shows a linear relationship between *x* and *y*.

What is the value of *a*?

A. -18
B. -14
C. 14
D. 18

x	*y*
–7	*a*
–3	10
–1	6
0	4
5	–6

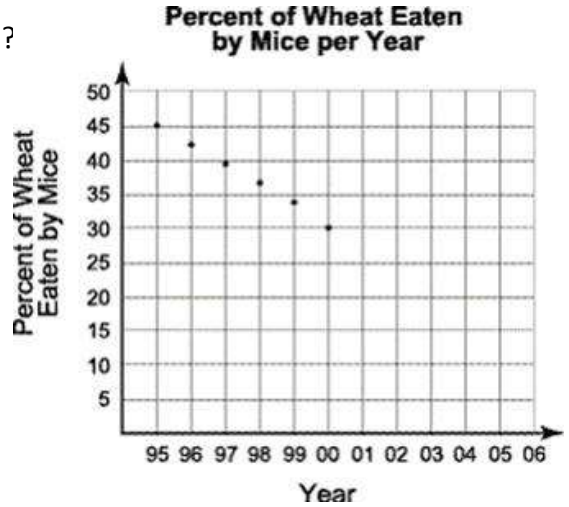
3. Joyce needs to gather data that can be modeled with a linear function. Which situation would give Joyce the data she needs?

A. the area of a square and the length of its side
B. the area of a circle and the length of the its radius
C. the perimeter of a square and the length of its side
D. the volume of a cylinder and the length of its radius

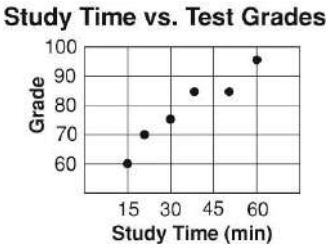
4. Which of the following is the most likely percentage in 2005?

A. 0 C. 25

B. 14 D. 45



5. Which of the statements is true about the data displayed in the scatter plot?



A. It shows a positive correlation.

B. It shows a negative correlation.

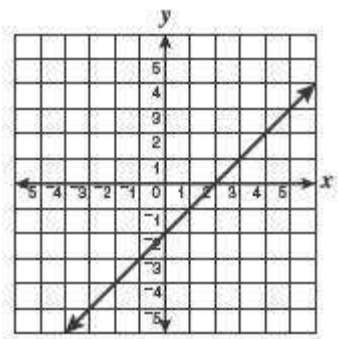
C. It shows no correlation.

D. Time increases as grade decreases.

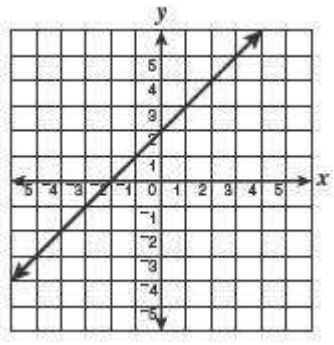
6.

x	y
-3	-1
0	2
3	5

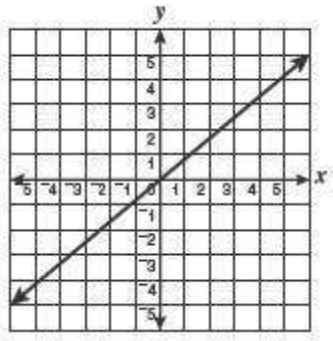
Which graph corresponds to the table above?



A



B



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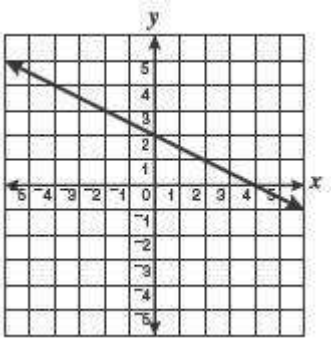
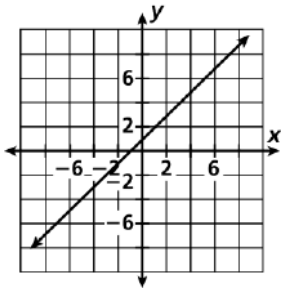


D

7. Which equation is graphed below?



A. $y = x + 1$ C. $y = -x + 1$

B. $y = x - 1$ D. $y = -x - 1$

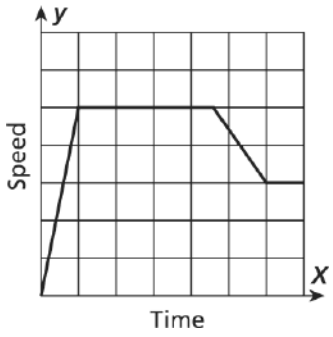
8.

Hours since 12 am	Number of times she heard a car horn
2	6
3	8
4	10
5	12
6	14
7	16
9	20
10	22
12	?
13	28
15	30

Jenny wanted to know if people were more likely to beep their horns at a certain time during the day. One night she recorded the number of times she heard a car horn during one hour intervals. What should be the value of the missing *y*-coordinate so that the data can be modeled with a linear function?

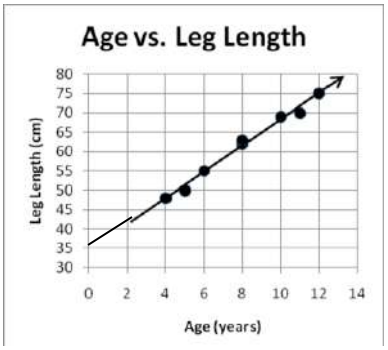
A. 24
B. 25
C. 26
D. 27

9. Which of the following situations corresponds to this graph? *(Be careful! The y-axis shows <u>speed</u>, not distance.)*



A. A car, accelerates from a stop, travels at a constant speed, slows, and then travels at a slower speed.
B. An airplane travels at a constant speed then decelerates.
C. An athlete warms up by walking around the track, runs, and then jogs.
D. A bicyclist accelerates, travels at a constant speed, and then stops.

10. Use the scatter plot below for 12–13.



Which gives the line of best fit?

A. $f(x) = 3\frac{1}{3}x$ C. $f(x) = 48x$

B. $f(x) = 3\frac{1}{3}x + 35$ D. $f(x) = 48x + 48$

11. What does the slope and *y*-intercept mean?

A. The slope of 48 tells how much the leg length increases for each 1 year increase in age. The *y*-intercept is 0 cm and gives the leg length when the age is 0 years.

B. The slope of 35 tells how much the leg length increases for each 1 year increase in age. The *y*-intercept is $3\frac{1}{3}$ cm and gives the leg length when the age is 0 years.

C. The slope of $3\frac{1}{3}$ tells how much the leg length increases for each 1 year increase in age. The *y*-intercept is 0 cm and gives the leg length when the age is 0 years.

D. The slope of $3\frac{1}{3}$ tells how much the leg length increases for each 1 year increase in age. The *y*-intercept is 35 cm and gives the leg length when the age is 0 years.

12. Describe the relationship between the number of hot chocolate sales and the temperature outside.

A. There is no correlation.
B. There is a positive correlation.
C. There is a negative correlation.
D. Insufficient data are present.

13. Using the graph below, describe the correlation between the amount spent and the number of people spending the money.

A. negative correlation; as the amount spent increases, the number of people spending that amount increases

B. negative correlation; as the amount spent increases, the number of people spending that amount decreases.

C. Positive correlation; as the amount spent increases, the number of people spending that amount decreases.

D. positive correlation; as the amount spent decreases, the number of people spending that amount increases.

14. Fiona interviewed her 30 classmates on whether or not they had a sibling and if they have assigned chores at home. She displayed her results in the two-way table shown. Which statement is true?

Have Brother	Have Sister	Have Brother	Only Child
Do Not have Chores	6	6	8
Have Chores	8	10	1

A. More than a quarter of her classmates are only children.
B. About half of her classmates have chores and the other half don't.
C. There are more classmates that are only children than have siblings.
D. Having a brother is more common than having a sister for her classmates.

15. Describe the relationship between the number of hot chocolate sales and the temperature outside.

E. There is no correlation.
F. There is a positive correlation.
G. There is a negative correlation.
H. Insufficient data are present.

16. The altitude of an airplane taking off from an airport is represented by the equation shown, where *y* represents the altitude, in feet, of the airplane and *x* represents the number of minutes since take-off.

$$y = 500x + 1050$$

Part A

What is the altitude of the airplane after 5 minutes? 30 minutes? Show your work.

Part B

Create a table for the values when $x = 0, 5, 8, 10, 30.$

Part C

Write your answers from Part B as ordered pairs.

Part D

Which ordered pair represents the *y* -intercept? What information does the *y* -intercept represent?

17. Plainview High School mailed a survey to the students who graduated the previous year. The survey asked the students whether or not they are enrolled in a college. The results of the students who returned the survey are shown.

There are 254 students.
172 of the students are females.
48 of the males enrolled in college.
124 of the females enrolled in college.

Part A

Complete the two-way table based on the given data.

Survey Results

	Male	Female	Total
Enrolled in College			
Not Enrolled in College			
Total			

18. **Jerald created the following chart to track the amount of dog food his dog ate. Use his chart to answer this question.**

Day Number (*x*)	**Amount of Dog Food Used (*y*)**
0	0
3	2
6	4

If Jerald starts out with 20 pounds of dog food, which equation represents how much dog food (*y*) will be left after any day (*x*)?

A. $y = -\frac{1}{3}x + 10$

C. $y = -\frac{1}{3}x + 20$

B. $y = -\frac{2}{3}x + 10$

D. $y = -\frac{2}{3}x + 20$

19. The table shows *p*, the charge in cents, for a long-distance phone call that lasts *t* minutes. *(Hint: Plug in the ordered pairs to see which equations they work for!)*

t	*p*
1	20
2	28
3	36
4	44

Which describes this relationship?

A. p $70t + 12$

B. $p = 8t + 12$

C. $p = 11t$

D. $p = 20t$