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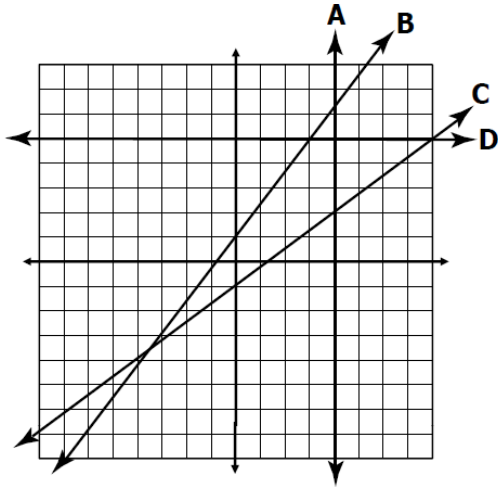
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Algebra I Unit 4 Test

Linear Equations

SHOW ALL WORK NEEDED TO ANSWER EACH QUESTION.
PLACE YOUR FINAL ANSWER IN THE BOX. GOOD LUCK! 😊

Use the graph below to answer questions 1 & 2.



1. Which line has a slope of $\frac{3}{4}$?

2. Which line has an undefined slope?

3. What is the slope of the line that contains the points $(-6, 1)$ and $(4, -4)$?

- A. 2
- B. -2
- C. $\frac{1}{2}$
- D. $-\frac{1}{2}$

4. What is the slope of the line that contains the points $(13, -2)$ and $(3, -2)$?

- A. $-\frac{2}{5}$
- B. 0
- C. $-\frac{5}{2}$
- D. undefined

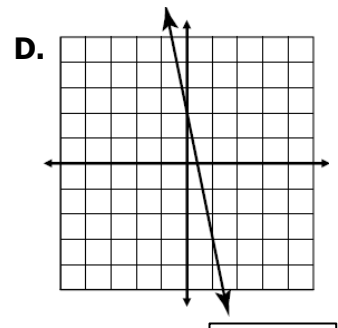
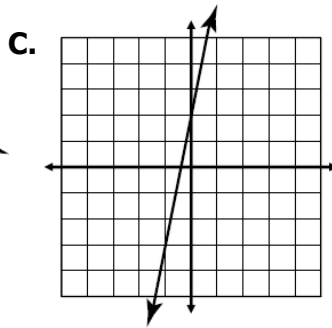
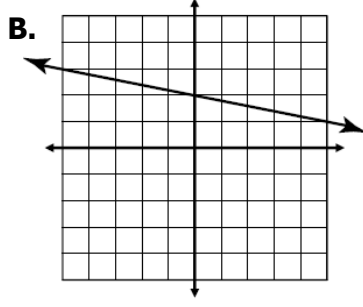
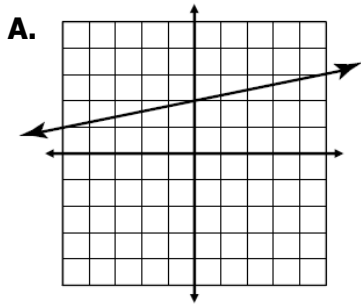
5. What is the slope of the line whose equation is $2y = 3x + 4$?

- A. 3
- B. 2
- C. $\frac{3}{2}$
- D. $\frac{2}{3}$

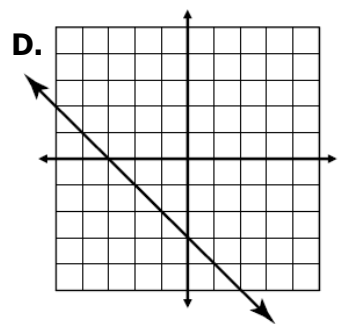
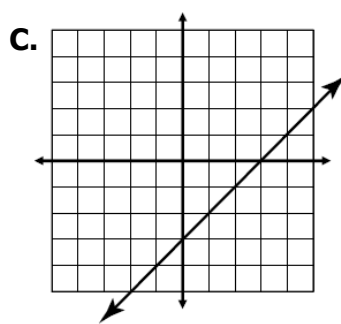
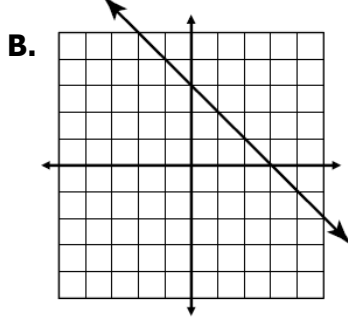
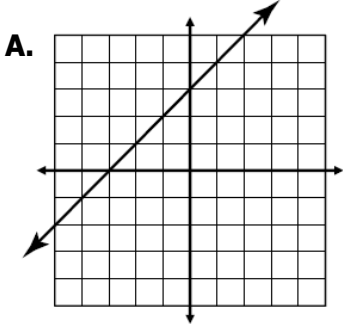
6. Which is an equation of the line with a slope of $\frac{1}{4}$ and a y -intercept of -2 ?

- A. $x - 4y = 8$
- B. $x + 4y = -8$
- C. $4x + y = -2$
- D. $4x - y = 2$

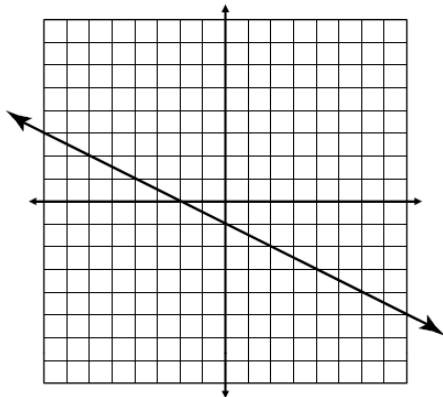
7. Which graph best represents the line $y = -\frac{1}{5}x + 2$?



8. Which graph best represents the line $x - y = 3$?



9. Identify the equation of the line graphed below.



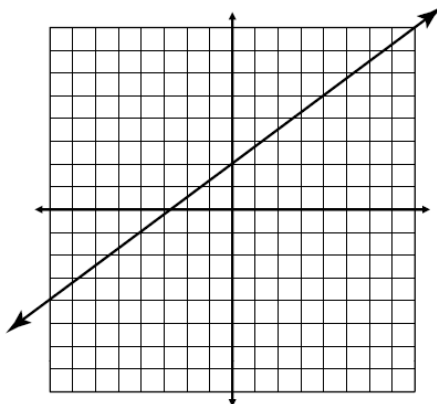
A. $x + 2y = -2$

B. $x - 2y = 2$

C. $2x + y = -1$

D. $2x - y = 1$

10. Identify the equation of the line graphed below.



A. $4x + 3y = 6$

B. $4x - 3y = -6$

C. $3x + 4y = 8$

D. $3x - 4y = -8$

11. Identify the x - and y -intercepts:

$$10x + 4y = -20$$

x -intercept

y -intercept

12. Which line has an x -intercept of -1 and a y -intercept of 1 ?

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

13. Which lines have a y -intercept of 5 ? Check all that apply.

$y = 5x - 1$

$4x - 8y = -40$

$x - y = 5$

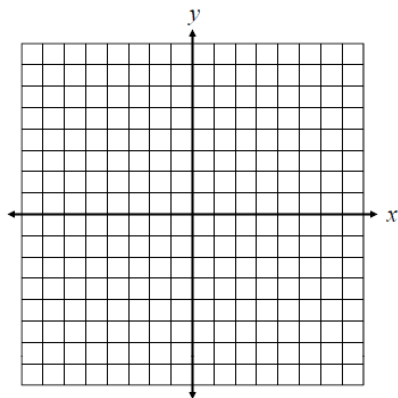
$x - 3y = 15$

$2x - y = 10$

$6x + 4y = 20$

14. Graph the linear equation below:

$$y = -2$$



15. What is the slope of the line $x = -5$?

- A. -5
- B. 5
- C. 0
- D. undefined

16. Write the equation of the line that passes through the point $(2, -1)$ and has a slope of -3 .

A. $y = -3x - 1$

B

.

17. Write the equation of the line that passes through the point $(-4, -9)$ and has a slope of $\frac{1}{2}$.

A. $y = \frac{1}{2}x - 7$

B. $y = \frac{1}{2}x + 7$

C. $y = \frac{1}{2}x + 11$

D. $y = \frac{1}{2}x - 11$

18. Which is the equation of the line that passes through the points $(-4, 3)$ and $(2, -6)$?

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

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

C. $y = \frac{3}{2}x + 3$

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

19. Which is the equation of the line that passes through the points $(-4, 8)$ and $(1, 3)$?

A. $y = -x + 4$

B. $y = -x + 12$

C. $y = x + 4$

D. $y = x + 12$

20. Which of the following lines is parallel to the line $4x + y = 5$?

A. $y = 4x - 2$

B. $y = -4x + 9$

C. $y = \frac{1}{4}x + 8$

D. $y = -\frac{1}{4}x - 1$

21. Which equation represents a line parallel to the y -axis?

A. $y = x$

B. $x = 4$

C. $y = 4$

D. $y = x + 4$

22. Which of the following lines is perpendicular to the line $y = -\frac{3}{5}x + 1$?

A. $3x + 5y = 10$

B. $3x - 5y = 20$

C. $5x + 3y = 21$

D. $5x - 3y = 27$

23. What is the equation of the line that passes through the point (3, -1) and is perpendicular to the equation $y = -3x + 2$?

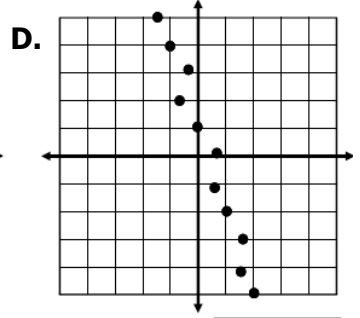
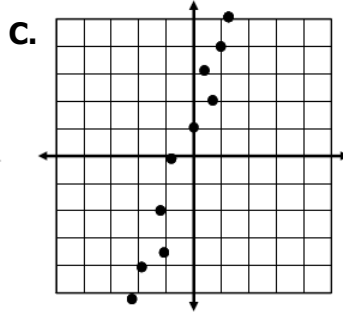
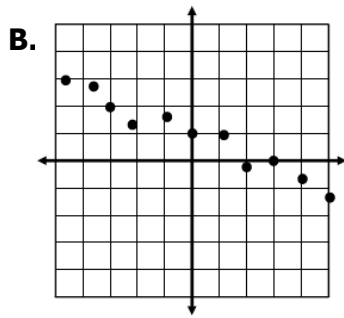
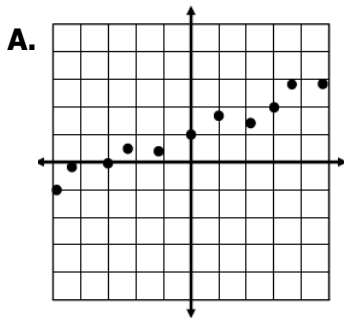
A. $y = -3x + 8$

B. $y = -3x$

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

D. $y = \frac{1}{3}x - 2$

24. Which scatter plot most likely has a line of best fit represented by $y = 3x + 1$?



25. Marsha recorded the time it took six children of different ages to run one lap around the track. Using the line of best fit, which is closest to the length of time it should take Marsha's 8 year old son to run one lap?

Age of Child	Time (Seconds)
4	230
6	205
10	132
13	119
14	108
17	62

A. 168 seconds

B. 176 seconds

C. 182 seconds

D. 190 seconds

26. The table shows the approximate population of Virginia for five years. If the trend continues, which could be a reasonable prediction if the population in 2018?

Year	Population
2000	7.08
2004	7.48
2006	7.64
2007	7.71
2008	7.77

A. 8.24 million people

B. 8.57 million people

C. 8.72 million people

D. 8.95 million people

- 27.** You plan to go snowboarding this weekend in Pennsylvania. The resort charges \$15.75 per hour in addition to a \$25 deposit to rent a snowboard. Write and solve linear equation to find the total cost to rent the snowboard from 8:30 a.m. to 12:30 p.m.

Equation

Solution

- 28.** When Brandon went bowling, it cost \$4.95 per game, plus a one-time fee to rent the shoes. Brandon played 5 games and paid \$32. Write and solve a linear equation to find the cost to rent the shoes.

Equation

Solution

- 29.** The monthly rent for an 800 square foot office is \$975. For an 1100 square foot office, the rent is \$1125. Write and solve a linear equation to find the monthly rent for a 1500 square foot office.

Equation

Solution

- 30.** Brielle's piggy bank has all nickels and dimes. The total value of the money in her piggy bank is \$7.80. If Brielle has 66 nickels, write and solve a linear equation to find the number of dimes she has.

Equation

Solution