

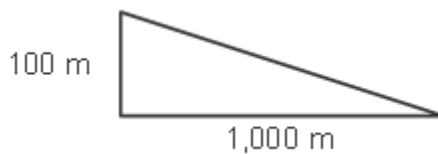
Chapter 3 Test 2 Study Guide

Indicate the answer choice that best completes the statement or answers the question.

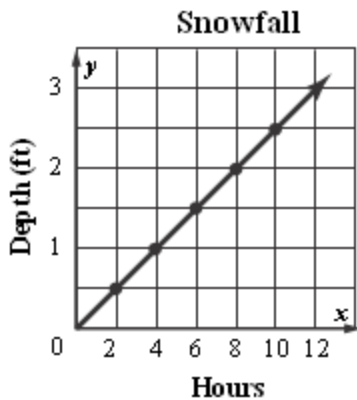
1) The points given in the table above lie on a line. Find the slope of the line.

x	-1	2	5	8
y	3	-1	-5	-9

2) **MOUNTAINS** Find the slope of a mountain that descends 100 meters for every horizontal distance of 1,000 meters.



SNOWFALL Use the graph below. It shows the depth in feet of snow after each two-hour period during a snowstorm.



3) Find the slope of the line.

4) Does the graph show a constant rate of change? Explain.

- A) No; the slope is the same between each pair of points.
- B) No; the slope is not the same between each pair of points.
- C) Yes; the slope is the same between each pair of points.
- D) Yes; the slope is not the same between each pair of points.

5) If the graph is extended to the right, could you expect the slope to remain constant? Explain.

- A) No; the amount of snowfall each hour will triple.
- B) Yes; the snowfall will always remain constant.
- C) No; the amount of snowfall each hour will double.
- D) No; the storm would eventually stop.

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6) Find the slope of the line that passes through the points $A(0, 2)$ and $B(4, -1)$.

7) State the slope and y-intercept for the graph of $3 - 7x = y$.

Indicate the answer choice that best completes the statement or answers the question.

ALGEBRA If y varies directly with x , write an equation for the direct variation. Then find the value.

8) Find x when $y = 18$, if $y = 5$ when $x = 4$.

9) **SOLAR ENERGY** The power absorbed by a solar panel varies directly with its area. If an 8 square meter panel absorbs 8,160 watts of power, how much power does a 12 square meter solar panel absorb?

- A) 12,240 watts
- B) 8,160 watts
- C) 1,020 watts
- D) 96 watts

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State the x - and y -intercepts of the function.

10) $-\frac{1}{4}x - \frac{1}{3}y = 12$

11) **FARMING** Mr. Jeans raises cows and chickens on his farm. Altogether, his cows and chickens have 140 legs. This can be represented by the function $4x + 2y = 140$. Interpret the x - and y -intercepts.

Write an equation in point-slope form and slope-intercept form for the line.

12) passes through $(6, -6)$, slope = 5

13) **TEMPERATURE** The table shows the temperature at certain hours.

Hour	Temperature (°F)
1	35
2	39

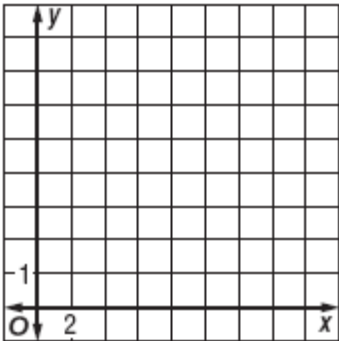
Assuming the temperature change is linear, write an equation in point-slope form to represent the temperature y at x hour.

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14) The table shows the items and their individual prices that Amy bought for her party. Altogether, she spent \$18. This is represented by the function $2x + 3y = 18$.

	Streamers	Balloons
Cost (\$)	\$2	\$3
Amount Bought	x	y

a. Graph the function.

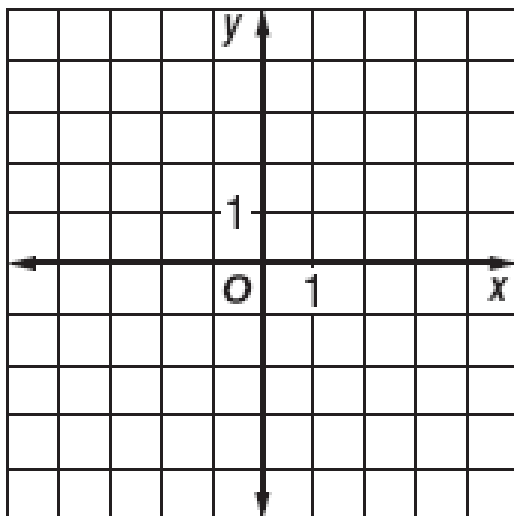


b. Interpret the x - and y -intercepts.

Indicate the answer choice that best completes the statement or answers the question.

Solve each system of equations by graphing.

15) $y = 3x + 4$
 $y = -x - 4$



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Solve each system of equations algebraically. Write your solution as an ordered pair.

16) $y = -x - 14$
 $0 = 8x + y$

17) $5x + y = 9$
 $10x - 7y = -18$

18) $-7x - 8y = 9$
 $-4x + 9y = -22$

19) Cooghan asked his 19 classmates whether they were right or left-handed. There were 5 more right-handed classmates than left-handed classmates.

a. Write a system of equations that can be used to find out how many classmates were right or left handed.

b. Solve the system.

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20) Isaiah bought a total of 32 pieces of candy. He bought 3 times as many soft pieces of candy as he did hard pieces of candy.

a. Write a system of equations that represents the number of pieces of candy Isaiah bought.

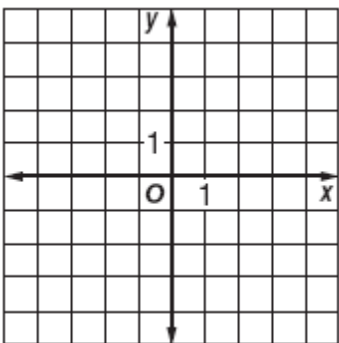
b. Solve the system.

c. Interpret the solution.

21) Solve the system by graphing.

$$y = 3x + 4$$

$$y = x + 2$$



22) Georgia is renting two kinds of rowboats for the campout. One type of rowboat seats 3 people and the other seats 5 people. If 53 people will be at the campout and she rents 13 boats, how many of each type of boat does she rent?

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Indicate the answer choice that best completes the statement or answers the question.

Write and solve a system of equations that represents each situation. Interpret the solution.

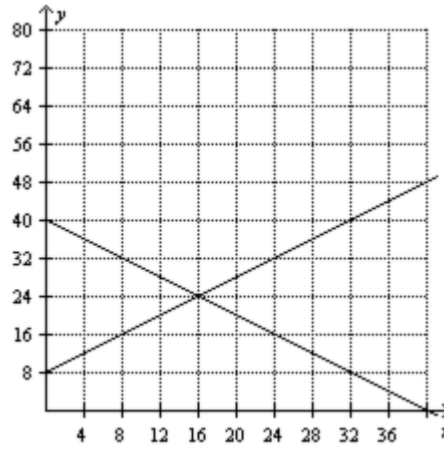
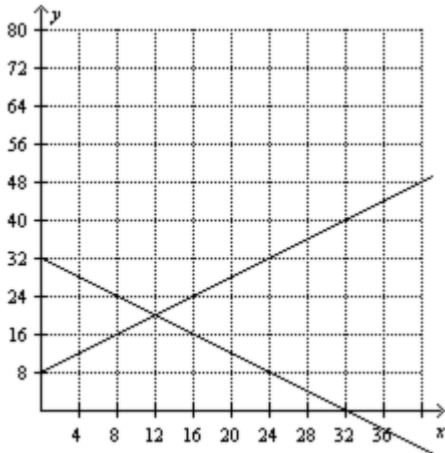
23) **DRIVING** Winston drove a total of 248 miles on Monday. He drove 70 fewer miles in the morning than he did in the afternoon. How many miles did he drive in the afternoon?

Find and interpret the solution to the system of equations that represents the situation.

24) **PING-PONG** Jenny won the ping-pong championship eight more times than Gerardo. They have won a combined total of 32 championships.

A) $j + g = 32$ and $g = j + 8$; (20, 12); Jenny has won 12 and Gerardo has won 20.

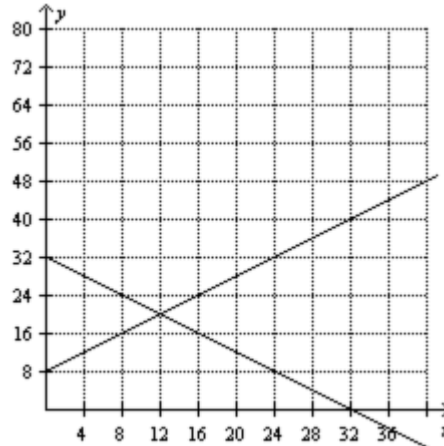
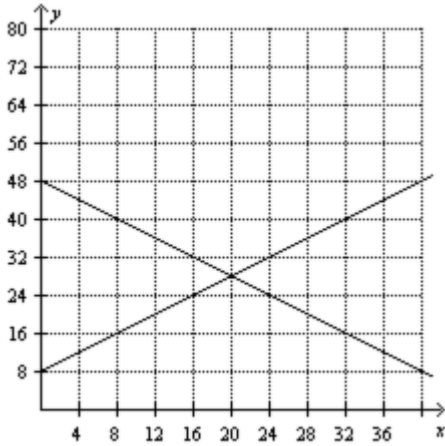
B) $j + g = 40$ and $g = j + 8$; (16, 24); Jenny has won 24 and Gerardo has won 16.



C) $j + g = 48$ and $g = j + 8$; (20, 28); Jenny has won 28 and Gerardo has won 20.

D) $j + g = 32$ and $j = g + 8$; (12, 20); Jenny has won 20 and Gerardo has won 12.

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25) What is the solution of the system of equations below?

$$y + 2x = 2$$

$$y + 4x = 0$$

26) Write the standard form of the equation with a slope of $\frac{4}{5}$ and passes through the point (5, 2).

27) Write the slope-intercept form of the equation that is perpendicular to $4x + 2y = -14$ and passes through the point $(-6, 8)$.

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28) Which linear equation is parallel to $y = -3$ and passes through the point $(7, -8)$?

A) $y = -8$ B) $x = -8$

C) $y = 7$ D) $x = 7$

29) A system of equations consists of two lines. One line passes through $(-3, -3)$ and $(6, -9)$. The other line passes through $(0, 4)$ and $(9, -2)$. Determine if the system has *no solution*, *one solution*, or an *infinite number of solutions*.

A) no solution

B) one solution

C) infinite number of solutions

30) Write the linear equation of the line that passes through $(-3, 0)$ and $(5, -6)$ in a) slope-intercept form, b) point-slope form, and c) standard form.

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Answer Key

1) $-\frac{4}{3}$

2) $-\frac{1}{10}$

3) $\frac{1}{4}$

4) C

5) D

6) $-\frac{3}{4}$

7) slope: -7 , y-intercept: 3

8) $y = \frac{5}{4}x$; $x = 14\frac{2}{5}$

9) A

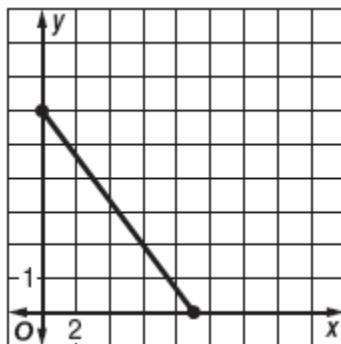
10) x-intercept -48 ; y-intercept -36

11) The x-intercept indicates that he has 35 cows and no chickens. The y-intercept indicates that he has 70 chickens and no cows.

12) $y + 6 = 5(x - 6)$
 $y = 5x - 36$

13) $y - 35 = 4(x - 1)$ OR $y - 39 = 4(x - 2)$

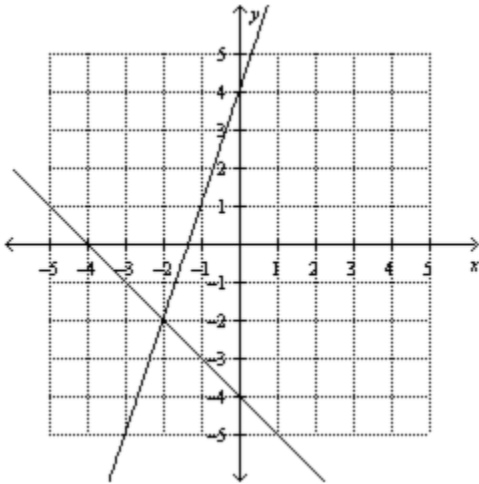
14) a.



b. Amy bought 9 streamers and no balloons, Amy bought no streamers and 6 balloons.

15) $(-2, -2)$

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16) (2, -16)

17) (1, 4)

18) (1, -2)

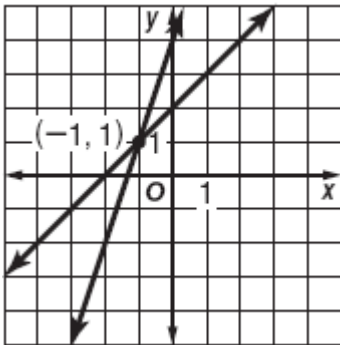
19) **a.** $r + l = 19, r = l + 5$

b. 12 right handed, 7 left handed

20) **a.** $s + h = 32, s = 3h$

b. $s = 24, h = 8$

c. Isaiah bought 24 soft pieces of candy and 8 hard pieces of candy.



21) (-1, 1);

22) 6 boats seating 3 people, 7 boats seating 5 people

23) Let m = the number of miles in the morning and a = the number of miles in the afternoon; $m = a - 70, m + a = 248$;
159 mi

24) D

25) (-1, 4)

26) $4x - 5y = 10$

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27) $y = \frac{1}{2}x + 11$

28) A

29) A

30) a) $y = -\frac{3}{4}x - \frac{9}{4}$

b) $y + 6 = -\frac{3}{4}(x - 5)$ OR $y = -\frac{3}{4}(x + 3)$

c) $3x + 4y = -9$