Chapter 4 Quiz 1 Review

Remember to use a separate sheet of paper and show all work.

Graph the function with the given domain. Then identify the range of the function.

1. $y = 3x - 4$ d: {-2,-1,0,1,2}
2. $y = 6 - 4x$; domain x≤0
3. $y = -2x + 5$; domain -2≤x≤6

Solve the equation for y.

4. $x - 6y = 18$

Graph the equation using intercepts.

5. $10x - 5y = -5$

Graph the equation using slope and y-intercept.

6. $y = 2x + 8$
7. $6y + 3x = 18$

Find the slope of the line that passes through the points.

8. (2,-5) and (5,-5)
9. (-8, -7) and (-4,-2)

Find the slope using the information given

10. (-1/2, 6), (4, -3/2)
11. $3x - 2y = 12$
12. $5x + y = 15$
13. $x = 7$
14. $y = -14$

Find the value of x or y so that the line passing through the two points has the given slope.

15. (-3,y), (-9, -2); m=1
16. (-7,-1), (-2,y); m=3/5

Identify the slope and y-intercept of the line with the given equation.

17. $4x - 5y = 15$
18. $6y - 8x = 18$

Find the missing value so the points lie on the same line.

19. (x,4), (3,7), (9,1)
20. (3,4), (-2,y), (8,7)

21. You are considering buying a variable-speed drill. One model you are considering has two different speeds. The number of revolutions r of the drill bit in m minutes using the slower speed is given by equation r=300m. The number of revolutions using the faster speed is given by the equation r=1200m.
    a. Graph both equations in the same coordinate plane. What do the r-intercepts mean in this situation?
    b. How many more revolutions in 3 minutes does the faster speed on the drill make than the slower speed?

Tell whether the equation represents direct variation. If so, identify the constant of variation.

22. $3x + y = -2$
23. $4x + 3y = 9$

24. $6.5x = 13y$

25. The slope of a line is 5 and the point (-4,11) lies on the line. Use the formula for the slope of a line to determine if the equation of the line is a direct variation equation.

Write the equation for a linear function in the form $f(x) = mx + b$ that has the given value.

26. $f(-8) = 10;\ f(0) = 2$

27. What value of c in the equation $cx + 4y = 12$ would give the equation a slope of 8?

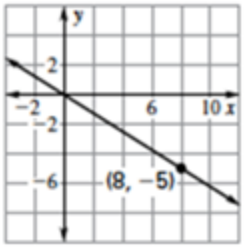
28. What is the intersection of the lines $y = 12$ and $= -\frac{5}{3}$?

29. Choose the lines that represent a linear function.
    a. $y = 7$
    b. $x = 12$
    c. $\frac{1}{4}x + 2y = 10$
    d. $\frac{4}{y} + \frac{2}{x} = 20$
    e. $4x^2 = 10$

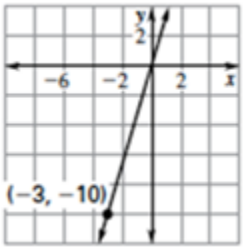
30. Is the equation 4x-y-2=0 an example of direct variation? Explain why or why not.

The graph of a direct variation equation is shown. Write the direct variation equation. Then find the value of y when x=10.

31.



32.



Decide which of the two points lies on the graph of the line.

33. $5x + y = 18$
    a. (3,3)
    b. (5,7)

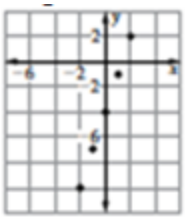
34. $x - 3y = 12$
    a. (9,1)
    b. (6,-2)

35. You can hike at an average rate of 3 miles per hour. Your total hiking distance d (in miles) where t is the time (in hours) you hike can be expressed as d=3t. You plan on hiking no more than 10 hours this weekend.

a. What is the domain and range?
b. Graph the function.
c. Identify and interpret the intercepts.
d. How long does it take to hike 6 miles?

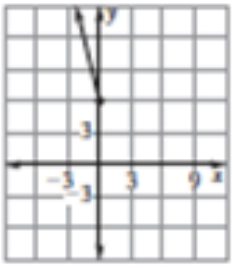
Answers

1. Range: {-10,-7,-4,-1,2}



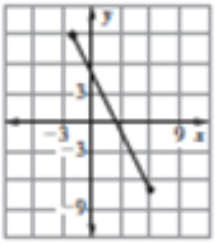
2.

range: $y \geq 6$



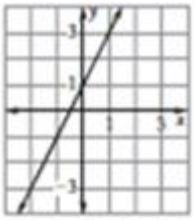
3.

range: $-7 \leq y \leq 9$



4. $y = \frac{1}{6}x - 3$

5.



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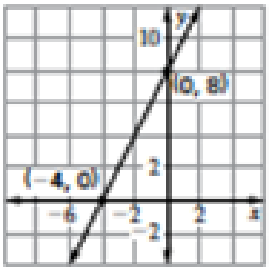

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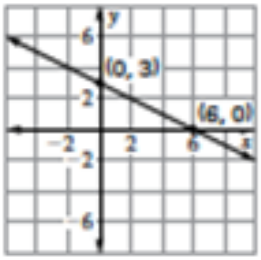
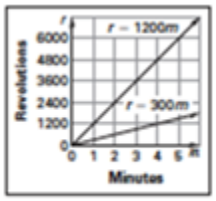


8. 0
9. 5/4
10. -5/3
11. 3/2
12. -5
13. undefined
14. 0
15. 4
16. 2
17. m=4/5, y-intercept =-3
18. m=4/3, y-intercept =3
19. 6
20. 1
21. The r-intercepts indicate the number of revolutions per minute when the drill isn't on.

a.



b. 2700 revolutions

22. No
23. No
24. Yes; 2
25. No
26. $f(x) = -x + 2$
27. -32
28. (-5/3,12)
29. a and c

30. No; if you write the equation in slope-intercept form, you get $y = -\frac{2}{3}x - 2$. This equation would intersect the y-axis at (0,2). Direct variation equations must intersect at the origin.
31. $y = -\frac{5}{8}x; -\frac{25}{4}$
32. $y = \frac{10}{3}x; \frac{100}{3}$
33. a
34. b
35. a. Domain: $0 \le x \le 10$; Range: $0 \le y \le 30$

    c. (0,0). You have hiked 0 miles and 0 hours.

    d. 2 hours