Semester 1 Review Name _____

Put the answer choice on the line provided.

Solve the equation in questions 1-4.

_____   1. $\frac{3}{7}x + 5 = 8$

       a. 7   b. $1\frac{2}{7}$ c. -7 d. $7\frac{2}{3}$

_____   2. $7 = -d + 20$

       a. -10 b. 20   c. 13   d. -13

_____   3. $3p - 1 = 5(p - 1) - 2(7 - 2p)$

       a. 3   b. 0   c. -9 d. -10

_____   4. $5x - 5 = 3x - 9$

       a. -2 b. 1   c. -1 d. -3

_____   5. A customer went to a garden shop and bought some potting soil for $17.50 and 4 shrubs. The total bill was $53.50. Write and solve an equation to find the price of each shrub.

       a. $4p + \$17.50 = \$53.50; p = \$9.00$ c. $4p + 17.5p = \$53.50; p = \$2.49$
       b. $4(p + \$17.50) = \$53.50; p = \$4.00$ d. $4p + \$17.50 = \$53.50; p = \$11.25$

_____ 6. Steven wants to buy a $565 bicycle. Steven has no money saved, but will be able to deposit $30 into a savings account when he receives his paycheck each Friday. However, before Steven can buy the bike, he must give his sister $65 that he owes her. For how many weeks will Steven need to deposit money into his savings account before he can pay back his sister and buy the bike?

    a. 25 weeks   b. 19 weeks   c. 22 weeks   d. 21 weeks

_____ 7. Which equation is an identity?

    a. $11 - (2v + 3) = -2v - 8$ c. $7m - 2 = 8m + 4 - m$
    b. $5w + 8 - w = 6w - 2(w - 4)$ d. $8y + 9 = 8y - 3$

_____ 8. Solve for x. $\dfrac{x - 8}{5} = \dfrac{2}{4}$

    a. $\dfrac{9}{2}$ b. $\dfrac{5}{2}$ c. $\dfrac{21}{2}$ d. 18

_____ 9. School guidelines require that there must be at least 2 chaperones for every 25 students going on a school trip. How many chaperones must there be for 80 students?

    a. 6 chaperones   c. 3 chaperones
    b. 40 chaperones   d. 7 chaperones

_____ 10. The length of a rectangle is 7 centimeters less than twice its width. The perimeter of the rectangle is 46 cm. What are the dimensions of the rectangle?

    a. length = 10 cm; width = 13 cm   c. length = 12 cm; width = 11 cm
    b. length = 15 cm; width = 11 cm   d. length = 13 cm; width = 10 cm

_____   11. Which number is a solution of the inequality? $3x - 15 \geq 3$

a. $-\dfrac{9}{11}$ b. 5   c. $\dfrac{6}{11}$ d. 6

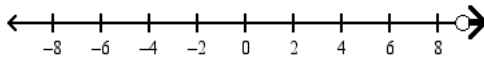_____   12. Write an inequality for the situation. Thomas earned $44 or more.

a. $t > 44$ b. $t \leq 44$ c. $t < 44$ d. $t \geq 44$
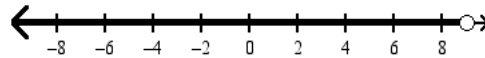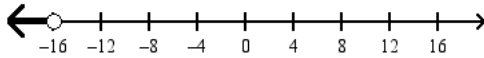
_____   13. Solve for w. $-2w < -18$

a. $w > 9$

c. $w < 9$

b. $w < -16$

d. $w > -16$
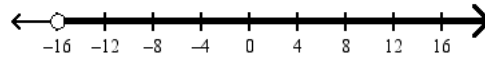
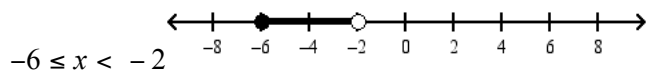_____   14. Solve for x. $-8 \leq 2x - 4 < 4$

a. $0 \leq x < 6$

c. $-2 \leq x < 4$
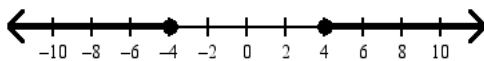

b. $-2 \leq x < 0$
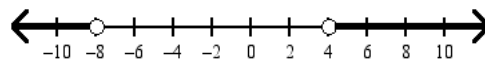

d.

$-6 \leq x < -2$
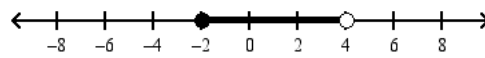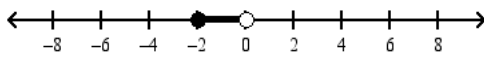
_____   15. Solve for d. $|d + 2| \geq 6$

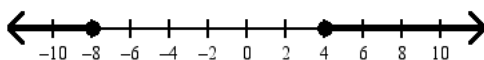a. $d \leq -4$ or $d \geq 4$

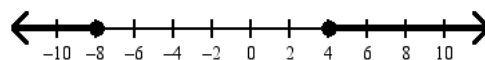c. $d \leq -8$ or $d \geq 4$

b. $d \geq -8$ or $d \geq 4$

d. $d \leq -8$ or $d \geq 4$

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_____ 16. Solve for x. $-5x - 7 < 28$

  a. $x > -7$ b. $x < -7$ c. $x > \dfrac{21}{5}$ d. $x < -\dfrac{21}{5}$

_____ 17. Solve for b. $2(b - 8) > 12$

  a. $b > 20$ b. $b > 6$ c. $b > 14$ d. $b < 20$

_____ 18. The French club is sponsoring a bake sale. If their goal is to raise at least $140, how many pastries must they sell at $3.50 each in order to meet that goal? Write and solve an inequality.
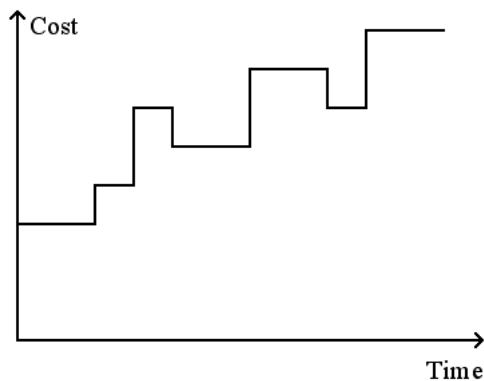
  a. $3.50p \geq 140;\ p \geq 490$ c. $3.50p \geq 140;\ p \geq 136.5$
  b. $140p \geq 3.50;\ p \geq 40$ d. $3.50p \geq 140;\ p \geq 40$

_____ 19. The graph below shows how the cost of gasoline changes over one month. According to the graph, the cost of gasoline _____ decreases.

  a. always   b. sometimes   c. never

Write a function rule for the table.

_____ 20.

x	f(x)
2	−8
3	−12
4	−16
5	−20

  a. $f(x) = -4x$ b. $f(x) = 4x$ c. $f(x) = x - 4$ d. $f(x) = x + 4$

_____ 21. Write a function rule that gives the total cost $c(p)$ of p pounds of sugar if each pound costs \$0.59.
- a. $c(p) = 59p$
- b. $c(p) = \dfrac{p}{0.59}$
- c. $c(p) = p + 0.59$
- d. $c(p) = 0.59p$

_____ 22. A snail travels at a rate of 2.37 feet per minute.
a. Write a rule to describe the function.
b. How far will the snail travel in 6 minutes?

- a. $d(t) = 6t$; 14.22 ft
- b. $d(t) = 2.37t$; 14.22 ft
- c. $d(t) = t + 2.37$; 8.37 ft
- d. $d(t) = \dfrac{t}{2.37}$; 2.53 ft

The rate of change is constant in the table. Find the rate of change. Explain what the rate of change means for the situation.

_____ 23.

Time (days)	Cost ($)
3	75
4	100
5	125
6	150

- a. $\dfrac{25}{1}$ dollars per day; the cost is \$25 for each day.
- b. $\dfrac{1}{25}$ dollars per day; the cost is \$25 for each day.
- c. $\dfrac{75}{1}$ dollars per day; the cost is \$75 for each day.
- d. $\dfrac{1}{150}$ dollars per day; the costs \$1 for 150 days

Find the rate of change for 24 and 25.

_____ 24. A chef cooks 9 lbs of chicken for 36 people and 17 lbs of chicken for 68 people.

- a. $\dfrac{9}{17}$ lb per person
- b. 4 lb per person
- c. $\dfrac{1}{4}$ lb per person
- d. 36 people

_____ 25. (1, 7), (10, 1)

- a. $\dfrac{3}{2}$
- b. $-\dfrac{2}{3}$
- c. $-\dfrac{3}{2}$
- d. $\dfrac{2}{3}$

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26. A student finds the slope of the line between (6, 11) and (8, 20). She writes $\dfrac{11 - 20}{8 - 6}$. What mistake did she make?
   a. She should have added the values, not subtracted them.
   b. She used y-values where she should have used x-values.
   c. She did not keep the order of the points the same in the numerator and the denominator.
   d. She mixed up the x- and y-values.
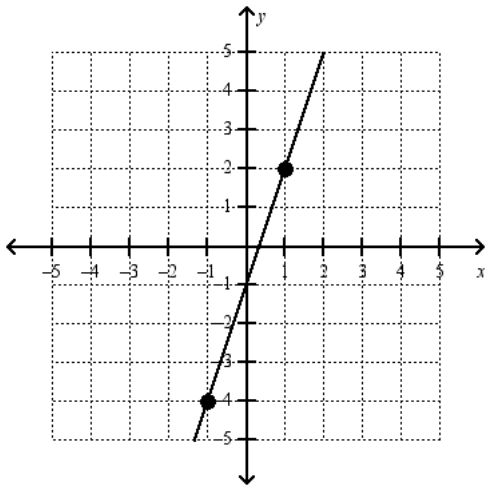
State whether the slope is 0 or undefined.

_____ 27.
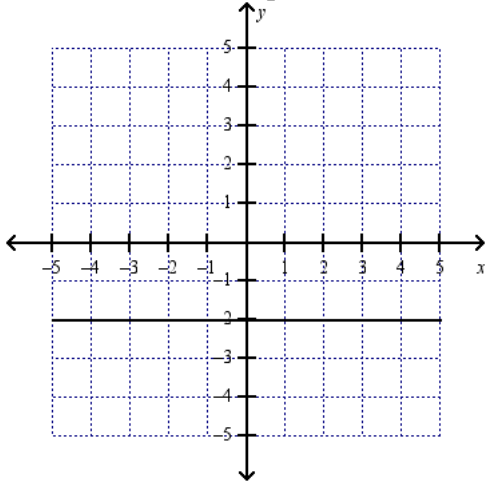
   a. undefined   b. 0

Find the slope and y-intercept of the line.

_____ 28. $6x + 2y = 24$

   a. $-3; \dfrac{1}{12}$ c. $6; 24$

   b. $-3; 12$ d. $-\dfrac{1}{3}; 12$

Write the slope-intercept form of the equation for the line.

_____ 29.

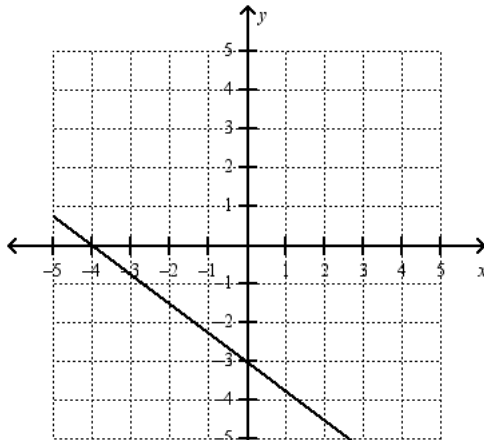   a. $y = 3x - 1$ c. $y = \dfrac{1}{3}x + 1$

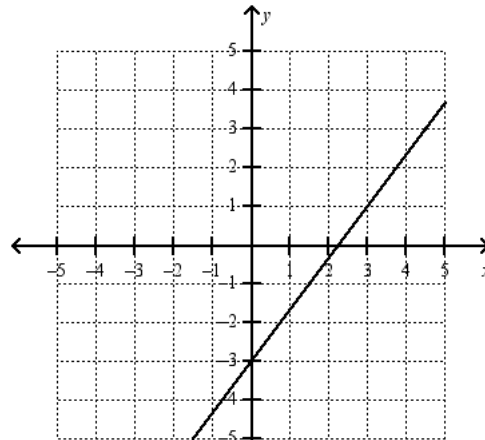   b. $y = -3x - 1$ d. $y = \dfrac{1}{3}x - 1$

_____ 30. Use the slope and y-intercept to graph the equation.
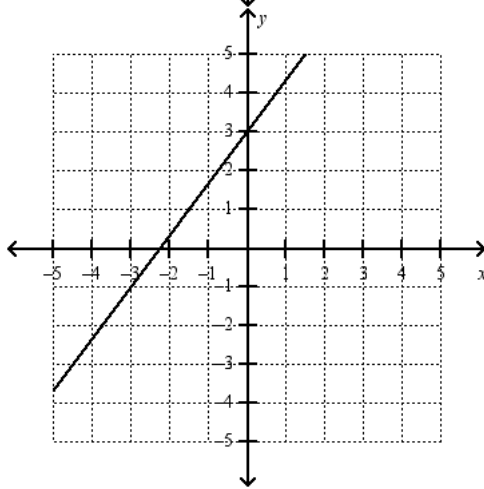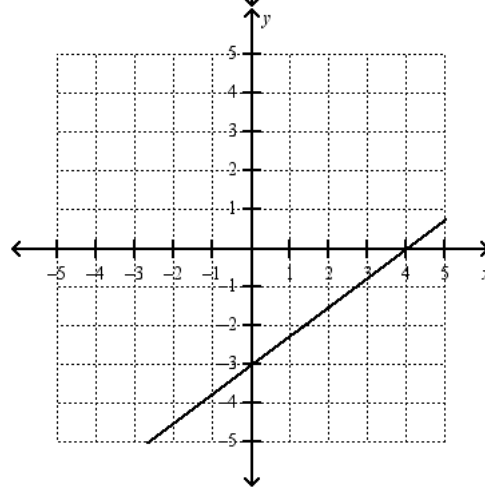
$y = \frac{3}{4}x - 3$

a.

c.

b.

d.

_____ 31. Find the x and y intercepts. $-3x + 9y = 18$

a. x-intercept is 2; y-intercept is –6.
b. x-intercept is –3; y-intercept is 9.

c. x-intercept is –6; y-intercept is 2.
d. x-intercept is 9; y-intercept is –3.

_____ 32. Write $y = \frac{5}{8}x + 10$ in standard form using integers.

a. $-5x + 8y = 80$
b. $-5x - 8y = 80$

c. $8x - 5y = 80$
d. $-5x + 8y = 10$

_____ 33. The grocery store sells kumquats for $4.25 a pound and Asian pears for $2.25 a pound. Write an equation in standard form for the weights of kumquats k and Asian pears p that a customer could buy with $18.

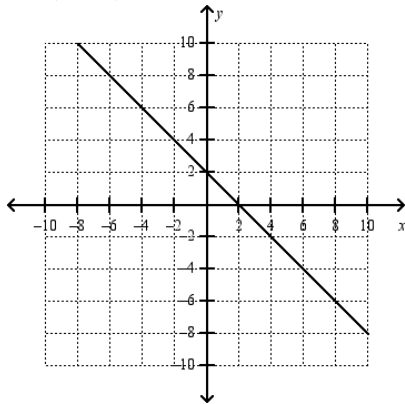a. $4.25k + 2.25p = 18$

c. $4.25k = 2.25p + 18$

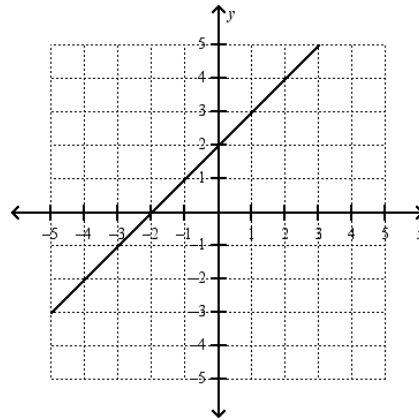b. $4.25p + 2.25k = 18$ d. $4.25 + 2.25 = k$

Graph the equation.
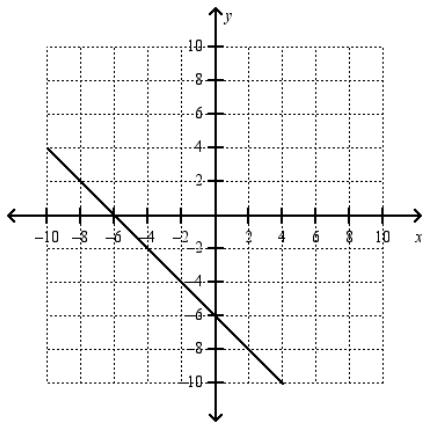
_____ 34. $y + 2 = -(x - 4)$

a.

c.

b.

d.
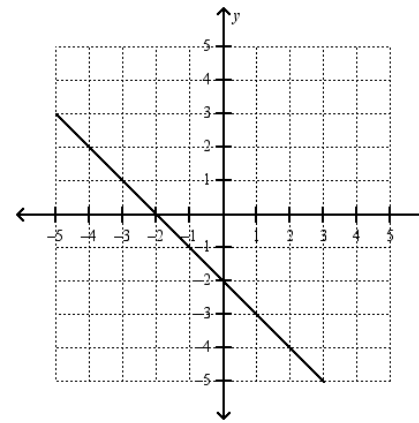
_____ 35. $y = 2$
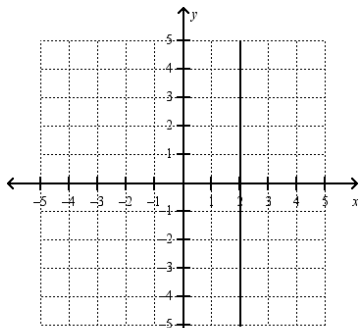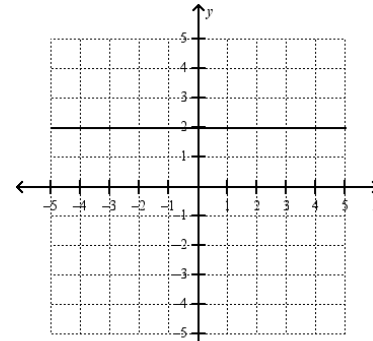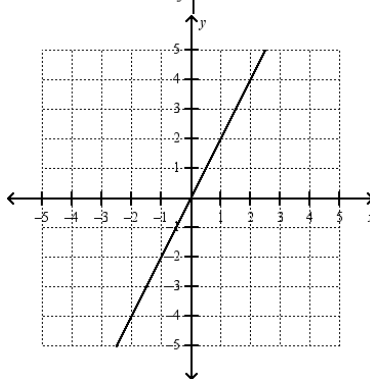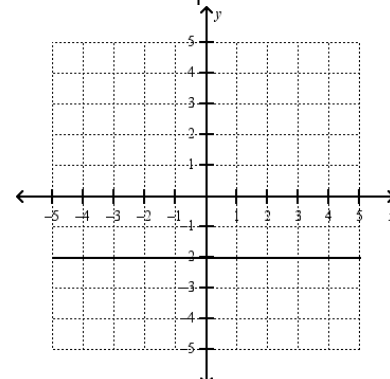
a.

c.

b.

d.

Write an equation in point-slope form for the line through the given point with the given slope.

_____ 36. $(-6, -8); m = \dfrac{1}{4}$

a. $y + 6 = \dfrac{1}{4}(x + 8)$

c. $y - 8 = \dfrac{1}{4}(x - 6)$

b. $y - 8 = \dfrac{1}{4}(x + 6)$

d. $y + 8 = \dfrac{1}{4}(x + 6)$

_____ 37. A line passes through $(1, -5)$ and $(-3, 7)$.
   a. Write an equation for the line in point-slope form.
   b. Rewrite the equation in slope-intercept form.

a. $y - 5 = 3(x + 1); y = 3x + 8$

c. $y - 5 = \dfrac{1}{3}(x + 1); y = \dfrac{1}{3}x + \dfrac{16}{3}$

b. $y - 1 = \dfrac{1}{3}(x + 5); y = \dfrac{1}{3}x + \dfrac{8}{3}$

d. $y + 5 = -3(x - 1); y = -3x - 2$

_____ 38. You roll a standard number cube. Find P(number greater than 4)

a. $\dfrac{1}{2}$

b. $\dfrac{3}{5}$

c. $\dfrac{2}{3}$

d. $\dfrac{1}{3}$

_____ 39. Suppose you choose a marble from a bag containing 2 red marbles, 5 white marbles, and 3 blue marbles. You return the first marble to the bag and then choose again. Find P(red and blue).

a. $\dfrac{3}{5}$

b. $\dfrac{7}{10}$

c. $\dfrac{1}{2}$

d. $\dfrac{3}{50}$

_____ 40. In a word game, you choose a tile from a bag, replace it, and then choose another. If there are 20 vowels and 16 consonants, what is the probability you will choose a consonant and then a vowel?

a. $\dfrac{80}{9}$

b. $\dfrac{40}{9}$

c. $\dfrac{1}{36}$

d. $\dfrac{20}{81}$

_____ 41. Prestige Builders has a development of new homes. There are four different floor plans, seven exterior colors, and an option of either a two-car or a three-car garage. How many choices are there for one home?

a. 34

b. 96

c. 64

d. 56

Answer Section

1. ANS: A
2. ANS: C
3. ANS: A
4. ANS: A
5. ANS: A
6. ANS: D
7. ANS: B
8. ANS: C
9. ANS: D
10. ANS: D
11. ANS: D
12. ANS: D
13. ANS: A
14. ANS: C
15. ANS: D
16. ANS: A
17. ANS: C
18. ANS: D
19. ANS: B
20. ANS: A
21. ANS: D
22. ANS: B
23. ANS: A
24. ANS: C
25. ANS: B
26. ANS: C
27. ANS: B
28. ANS: B
29. ANS: A
30. ANS: D
31. ANS: C
32. ANS: A
33. ANS: A
34. ANS: A
35. ANS: C
36. ANS: D
37. ANS: D
38. ANS: D
39. ANS: D
40. ANS: D
41. ANS: D