

Gustafson/Hughes College Algebra 12e Chapter 2 Form C

Multiple Choice/Short Answer

Identify the choice that best completes the statement or answers the question/Use the space provided to write your answer.

- _____ 1. Indicate whether the equation determines y to be a function of x .

$$|x - 2| = y$$

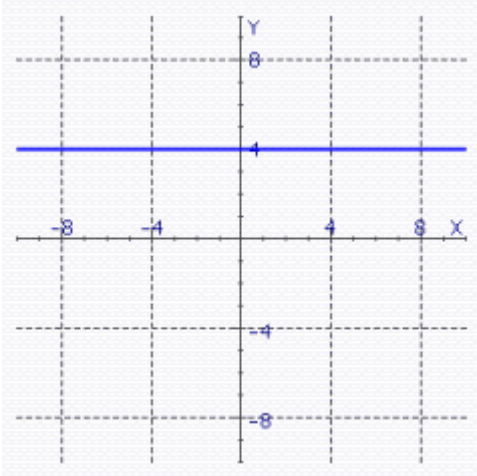
- a. yes
 - b. no
2. Find the equation in general form of the circle with the center at the origin and $r = 3$.

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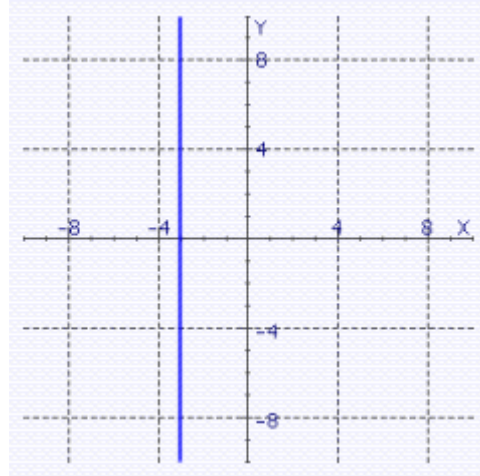
___ 3. Find the graph of the equation.

$$x = 3$$

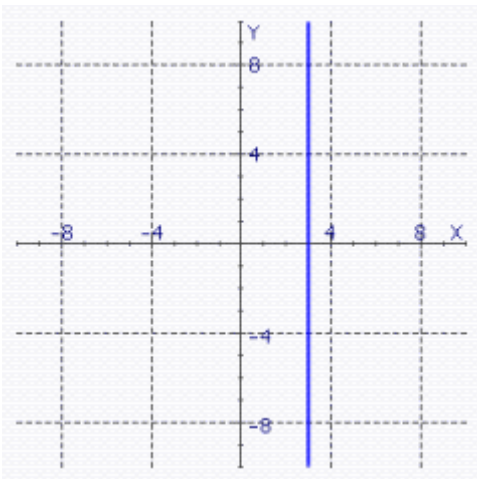
a.



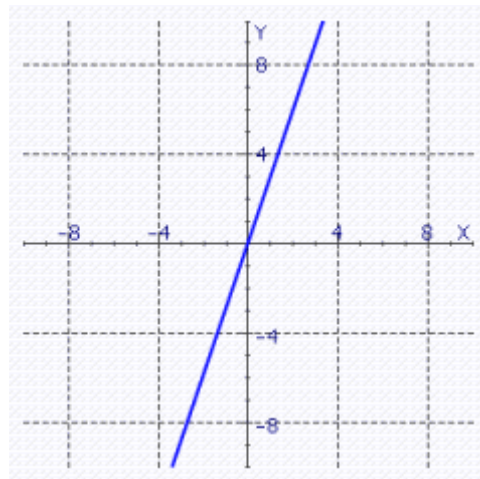
d.



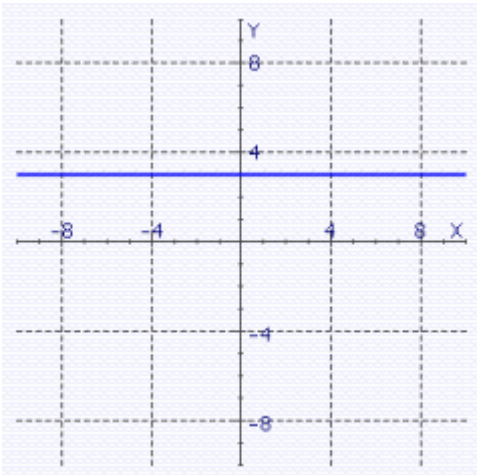
b.



e.



c.



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4. Find the equation in general form of the circle with the given properties.

Center at $(3, 3)$ and passing through the origin.

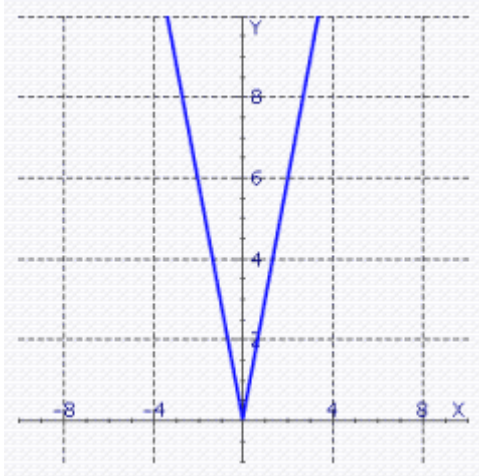
5. Given that y is directly proportional to x and $y = 35$ when $x = 8$, find y when $x = \frac{48}{7}$.

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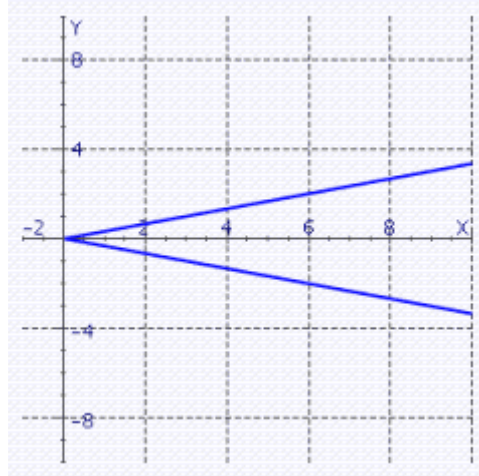
___ 6. Graph the equation.

$$y = 3|x|$$

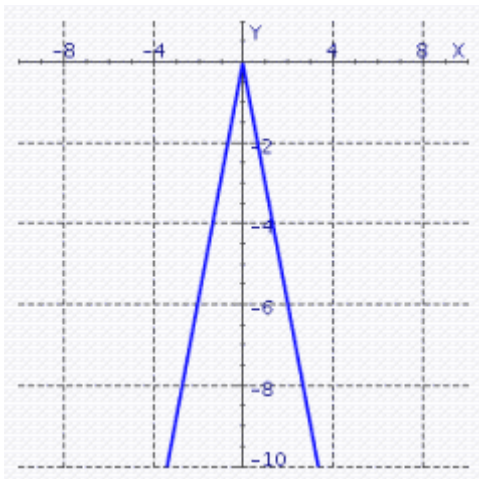
a.



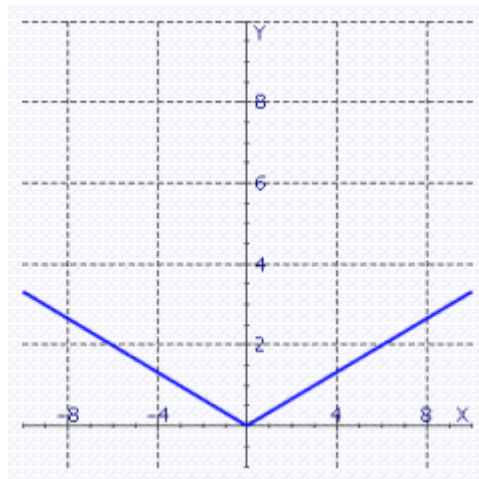
c.



b.



d.



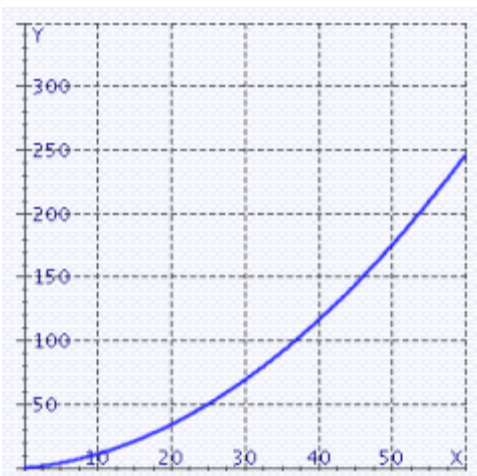
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7. Find the slope of the line passing through the pair of points.

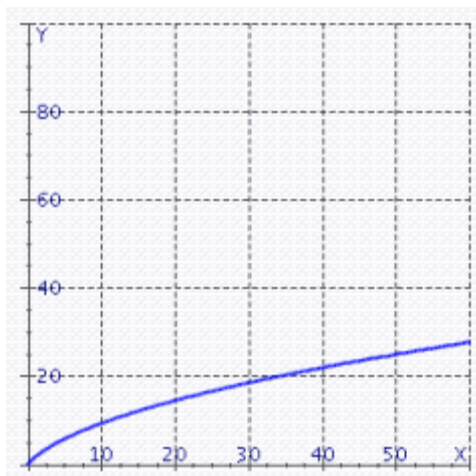
$$P(-2,-8); Q(15,1)$$

8. The stopping distance D (in feet) for a car moving V miles per hour is given by $D = 0.06V^2 + 0.5V$. Graph the equation for velocities between 0 and 60 mph.

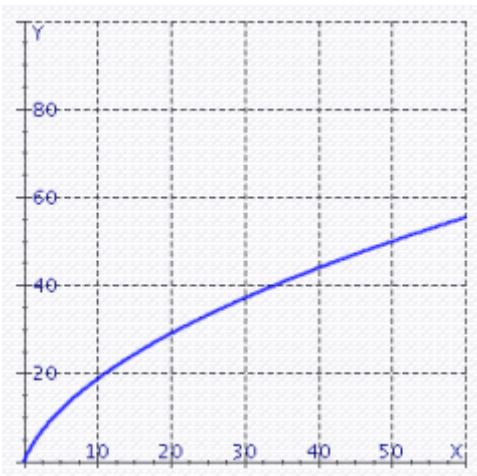
a.



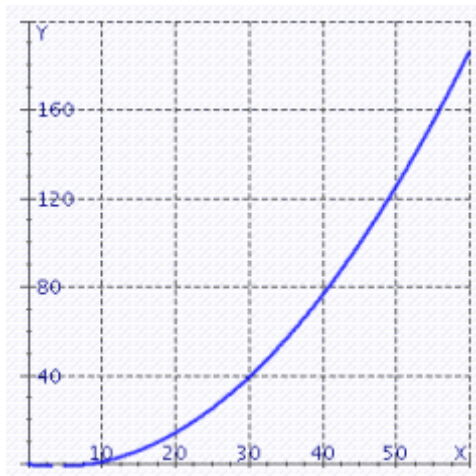
c.



b.



d.



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9. A student deposits \$10 each month in a Holiday Club account at her bank. The account pays no interest. Write an equation that expresses the amount in her account in terms of the number of deposits.

Please enter your answer as an equation $y = ax + b$, where x is the number of months and y is the amount in her account.

10. Indicate the quadrant in which the point $(2, 5)$ lies.

Please enter your answer as a number: 1, 2, 3, or 4.

11. Indicate the quadrant in which the point $(-5, -10)$ lies.

Please enter your answer as a number: 1, 2, 3, or 4.

12. Solve the proportion.

$$\frac{x}{18} = \frac{2}{x+5}$$

Please enter your answer as two numbers, separated by a comma.

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13. Find the distance between the point $P (\sqrt{8}, \sqrt{92})$ and $O (0,0)$.

____ 14. Find the slope of the line.

$$y = 16x + 12$$

- a. $m = 20$
- b. $m = 16$
- c. $m = 17$
- d. $m = 13$
- e. $m = -16$

15. When a college started an aviation program, the administration agreed to predict enrollments using a straightline method. If the enrollment during the first year was 12, and the enrollment during year 8 was 40, find the rate of growth per year (the slope of the line). See the illustration.



$$a = 40, b = 8$$

_____ students per year.

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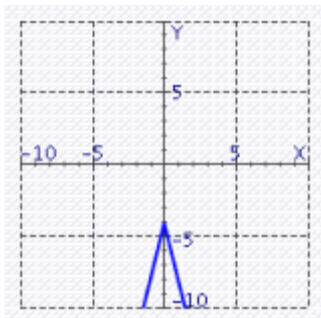
16. In the following exercise, assume straight-line appreciation.

An apartment building was purchased for \$475,000, excluding the cost of land. The owners expect the property to double in value in 5 years. Find the appreciation equation. Do not use commas in your numbers.

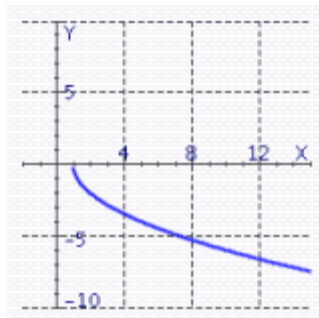
____ 17. Find the graph of the equation.

$$f(x) = -4|x| - 4$$

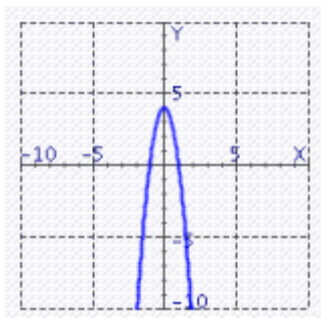
a.



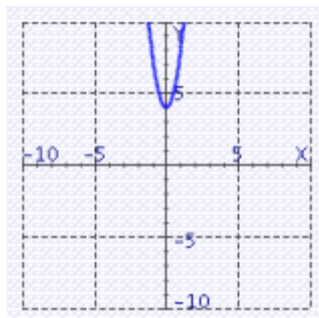
c.



b.



d.



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18. In the following exercise, assume straight-line depreciation.

A word processor costs \$545 when new and is expected to be worth \$20 after 7 years. What will it be worth after 3 years?

Please enter your answer rounded to the nearest whole dollar, without the units.

19. Find the y-intercept of the line determined by the equation.

$$-3x + 5y = 5$$

Please enter your answer as an ordered pair.

20. Solve the proportion.

$$\frac{2}{x} = \frac{2}{13}$$

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____ 21. Write the equation of the line that passes through the point $P(1, 4)$ and is perpendicular to the line $y = -5x + 10$.

a. $y = \frac{1}{5}x + 10$

b. $y = x + 3.8$

c. $x = 3.8y + \frac{1}{5}$

d. $y = \frac{1}{5}x + 3.8$

e. $y = \frac{1}{5}x + 4.2$

22. The ratio of lime to sand in mortar is 7 to 8. How much lime must be mixed with 72 bags of sand to make mortar?

Please enter your answer as a number without the units.

23. One endpoint $P(3, -2)$ and the midpoint $M(-3, 3)$ of line segment PQ are given. Find the coordinates of the other endpoint, Q .

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____ 24. Give the domain of the function.

$$f(x) = -\sqrt[3]{12x + 31}$$

- a. $(-\infty, 12)$
- b. $(-\infty, \frac{31}{12})$
- c. $(-\infty, 12]$
- d. $(-\infty, \infty)$
- e. $(0, \frac{31}{12})$

25. Find the slope of the line.

$$9(x - 25) = 30y + 25$$

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Answer Section

1. A
2. $x^2 + y^2 - 9 = 0$
3. B
4. $x^2 + y^2 - 6x - 6y = 0$
5. 30
6. A
7. $\frac{9}{17}$
8. A
9. $y = 10x + 0$
10. 1
11. 3
12. -9, 4
13. 10
14. B
15. 4
16. $y = 95,000x + 475,000$
17. A
18. 320
19. $(0, 1)$
20. 13
21. D
22. 63
23. $(-9, 8)$
24. D
25. $\frac{3}{10}$