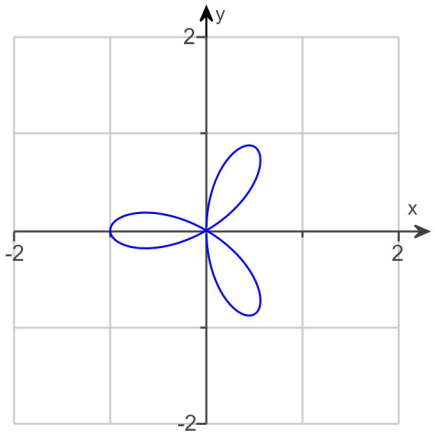
Student: Cole Lamers **Date:** 06/16/19	**Instructor:** Kelly Galarneau **Course:** CA&T Internet (70263) Galarneau	**Assignment:** 2.2, 2.3 Graphs of Equations and Lines

1. Determine whether (9,2) is on the graph of $y = 11x + 9$.

Is the point (9,2) on the graph of $y = 11x + 9$?

- [x] No
- [ ] Yes

2. The graph of an equation is given.
a. Find the intercepts.
b. Find symmetries, about the x-axis, the y-axis, and the origin.



What are the intercepts of the graph?

The x-intercept(s) is/are $-1, 0$.
(Type an integer or a fraction. Use a comma to separate answers as needed.)

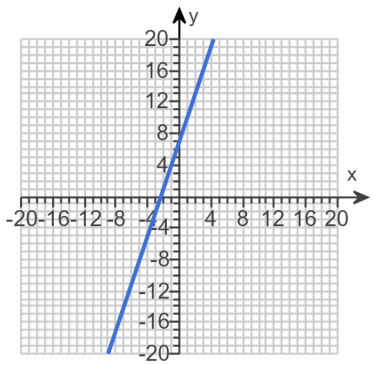
The y-intercept(s) is/are 0.
(Type an integer or a fraction. Use a comma to separate answers as needed.)
Determine the symmetries of the graph.

- [ ] It is symmetric with respect to the y-axis.
- [x] It is symmetric with respect to the x-axis.
- [ ] It is symmetric with respect to the origin.

3. Graph the equation.

$y = 3x + 7$

Use the graphing tool to graph the line.

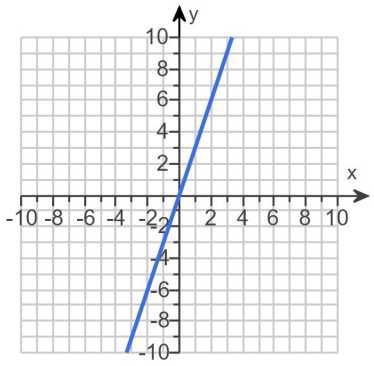


4.

Graph the equation by plotting points.

$y = 3x$

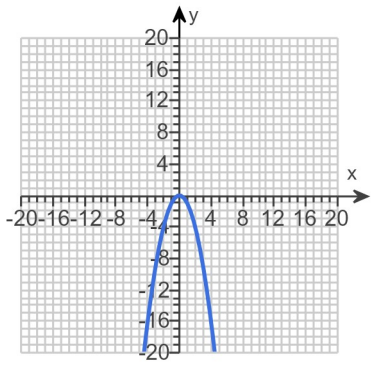
Use the graphing tool on the right to graph the equation.



5.

Graph the equation $y = -x^2$.

Use the graphing tool to graph the equation.

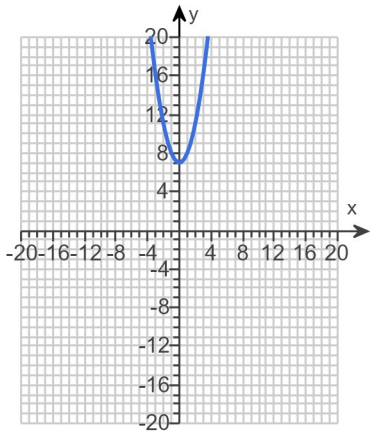


6.

Graph the following equation by plotting points.

$y = 7 + x^2$

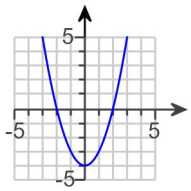
Use the graphing tool to graph the equation.



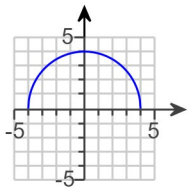
7. Graph the equation $y = \sqrt{16 - x^2}$.

Choose the correct graph.

A.



B.



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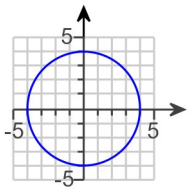
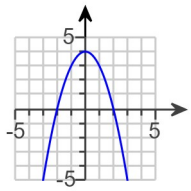


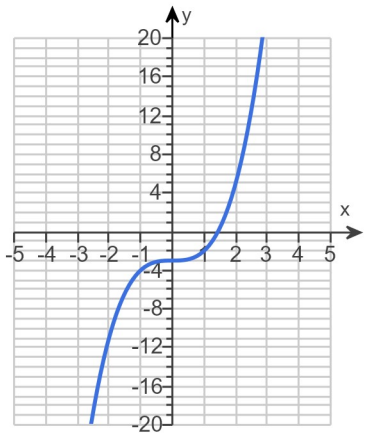
D.



8. Graph the following equation by plotting points.

$y = x^3 - 3$

Use the graphing tool to graph the equation.

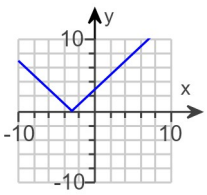


9. Graph the following equation by plotting points. Let $y = -7, -3$, and 1.

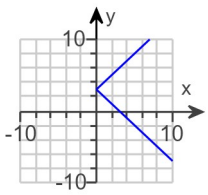
$x = |y + 3|$

Choose the correct graph below.

A.



B.



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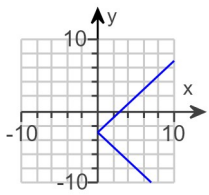
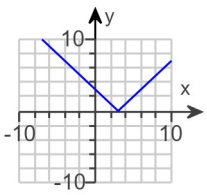


D.



10. Without sketching the graph, find the x-intercepts and y-intercepts of the graph of the equation.

$y = x^2 - 3x - 10$

What is/are the x-intercept(s)? Select the correct choice below and, if necessary, fill in the answer box within your choice.

- **A.** The x-intercept(s) is/are $5, -2$.
  (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- **B.** There are no x-intercepts.

What is/are the y-intercept(s)? Select the correct choice below and, if necessary, fill in the answer box within your choice.

- **A.** The y-intercept(s) is/are -10.
  (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- **B.** There are no y-intercepts.

11. Find the x- and y-intercepts of the graph of the equation.

$x^2 + y^2 = 100$

What are the x-intercepts? Select the correct choice below and, if necessary, fill in the answer box within your choice.

- **A.** The x-intercepts are $10, -10$. (Use a comma to separate answers as needed.)
- **B.** There are no x-intercepts.

What are the y-intercepts?

- **A.** The y-intercepts are $10, -10$. (Use a comma to separate answers as needed.)
- **B.** There are no y-intercepts.

12. Test the following equation for symmetry with respect to the x-axis, the y-axis, and the origin.

$y = x^2 + 6$

Select all that apply.

- [ ] **A.** Symmetric with respect to the x-axis.
- [x] **B.** Symmetric with respect to the y-axis.
- [ ] **C.** Symmetric with respect to the origin.
- [ ] **D.** None of these.

13. Test the equation for symmetry with respect to the x-axis, the y-axis, and the origin.

$y = 2x^6 + 4x^2$

Is the equation symmetric with respect to the x-axis? Choose the correct answer below.

- [x] No
- [ ] Yes

Is the equation symmetric with respect to the y-axis? Choose the correct answer below.

- [ ] No
- [x] Yes

Is the equation symmetric with respect to the origin? Choose the correct answer below.

- [ ] Yes
- [x] No

14. Test the equation for symmetry with respect to the x-axis, the y-axis, and the origin.

$y = -4x^7 + 7x^5$

Is the equation symmetric with respect to the x-axis? Choose the correct answer below.

- [ ] Yes
- [x] No

Is the equation symmetric with respect to the y-axis? Choose the correct answer below.

- [ ] Yes
- [x] No

Is the equation symmetric with respect to the origin? Choose the correct answer below.

- [x] Yes
- [ ] No

15. Determine the symmetries (if any) of the graph of the given relation.

$x^2 + y^2 = 5$

Choose the correct symmetry or symmetries of the graph.

- [x] **A.** x-axis, y-axis, and origin
- [ ] **B.** x-axis and y-axis only
- [ ] **C.** x-axis only
- [ ] **D.** origin only

16. Complete the following statement.

If two lines have the same slope, they are _____.

If two lines have the same slope, they are parallel .

17. Complete the following statement.

A line perpendicular to a line with slope $-\frac{1}{5}$ has slope _____.

What is the slope of the perpendicular line?

5

18. Find the slope of the line passing through the pair of points or state that the slope is undefined. Then indicate whether the line through the points rises, falls, is horizontal, or is vertical.

$(-2,2)$ and $(4,4)$

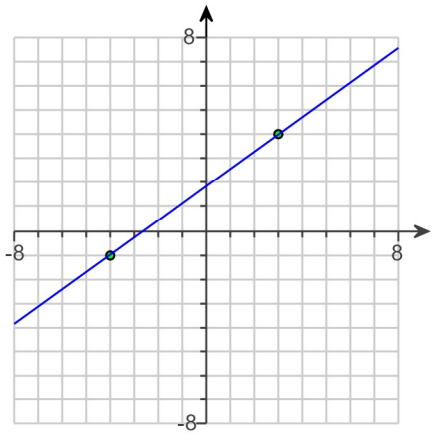
Select the correct choice below and, if necessary, fill in the answer box within your choice.

- **A.** The slope is $\frac{1}{3}$. (Simplify your answer.)
- **B.** The slope is undefined.

Indicate whether the line through the points rises, falls, is horizontal, or is vertical.

- **A.** The line is horizontal.
- **B.** The line falls from left to right.
- **C.** The line rises from left to right.
- **D.** The line is vertical.

19. Find the slope of the line shown on the graph to the right.



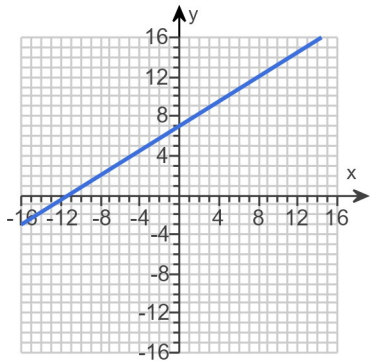
Select the correct choice below and, if necessary, fill in the answer box within your choice.

- **A.** The slope of the line is $\frac{5}{7}$.

  (Simplify your answer. Type an integer or a fraction.)
- **B.** The slope is undefined.

20. Find an equation in slope-intercept form of the line that passes through the given point and has slope m. Also, sketch the graph of the line by locating the second point with the rise-and-run method.

(0,7); $m = \frac{5}{8}$



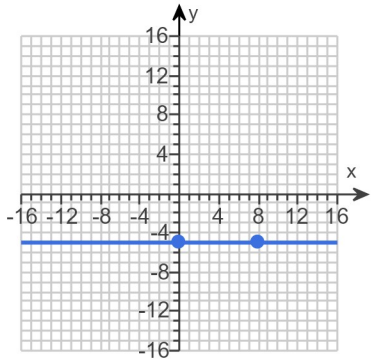
Give the equation of the line in slope-intercept form.

$y = \frac{5}{8}x + 7$

(Type an expression using x as the variable. Use integers or fractions for any numbers in the equation.)

Use the graphing tool to graph the line.

21. Find an equation in slope-intercept form of the line that passes through the point (4, − 5) and has slope m = 0. Also sketch the graph of the line by locating the second point with the rise-and-run method.



The equation of the line is $y = -5$.
(Type your answer in slope-intercept form.)

Use the graphing tool to graph the line.

22. Find an equation of the line containing the following points.

(8,6); (− 3,6)

What is an equation of the line containing the points?

$y = 6$

(Simplify your answer. Use integers or fractions for any numbers in the equation. Type your answer in slope-intercept form.)

23. Find an equation of the vertical line through (− 4, 8).

The equation is $x = -4$. (Type your answer in standard form.)

24. Use the given conditions to find an equation in slope-intercept form of the following nonvertical line.

$m = -\frac{5}{6}$; y-intercept $= 3$

The equation in slope-intercept form is

- **A.** $y = 3x - \frac{5}{6}$
- **B.** $-\frac{5}{6}x + 3y = 0$
- **C.** $y + \frac{5}{6}x = 3$
- **D.** $y = -\frac{5}{6}x + 3$ ✔

25. Let L_1 be a line with slope $m = -2$. Determine whether the given line L_2 is parallel to L_1, perpendicular to L_1, or neither.

a. L_2 is the line through the points (4,4) and (6,5).

b. L_2 is the line through the points (2,10) and (5,4).

c. L_2 is the line through the points (7,4) and (5,5).

a. The line L_2 is perpendicular to the line L_1.

b. The line L_2 is parallel to the line L_1.

c. The line L_2 is neither perpendicular nor parallel to the line L_1.

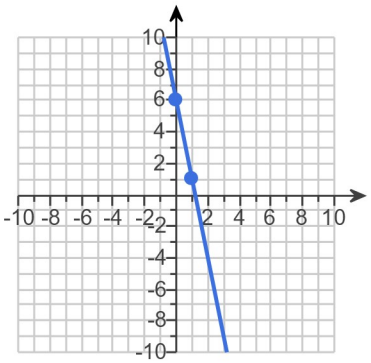
26. Rewrite the given equation in slope-intercept form and then graph the line.

$5x + y - 6 = 0$

What is the equation in slope-intercept form?

$y = -5x + 6$

Use the slope and the y-intercept to graph the line.



27. Rewrite the given equation in slope-intercept form and then graph the line.

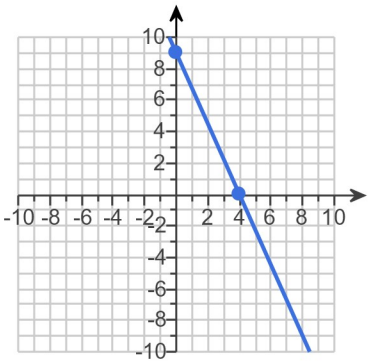
$9x + 4y - 36 = 0$

What is the equation in slope-intercept form?

$y = -\frac{9}{4}x + 9$

(Use integers or simplified fractions for any numbers in the equation.)

Use the slope and the y-intercept to graph the line.



28. Rewrite the given equation in slope-intercept form and then graph the line.

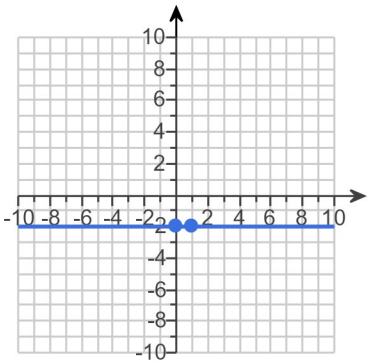
$7y + 14 = 0$

What is the equation in slope-intercept form?

$y = -2$

(Use integers or simplified fractions for any numbers in the equation.)

Use the slope and the y-intercept to graph the line.



29. Find the equation of the line in slope-intercept form satisfying the given conditions.

Parallel to $x + y = 4$; passing through (2,2)

The equation of the line parallel to $x + y = 4$ and passing through (2,2) is $y = -1x + 4$.

(Simplify your answer. Type an equation. Type your answer in slope-intercept form.)