

Name: _____ Class: _____ Date: _____

Chapter 2

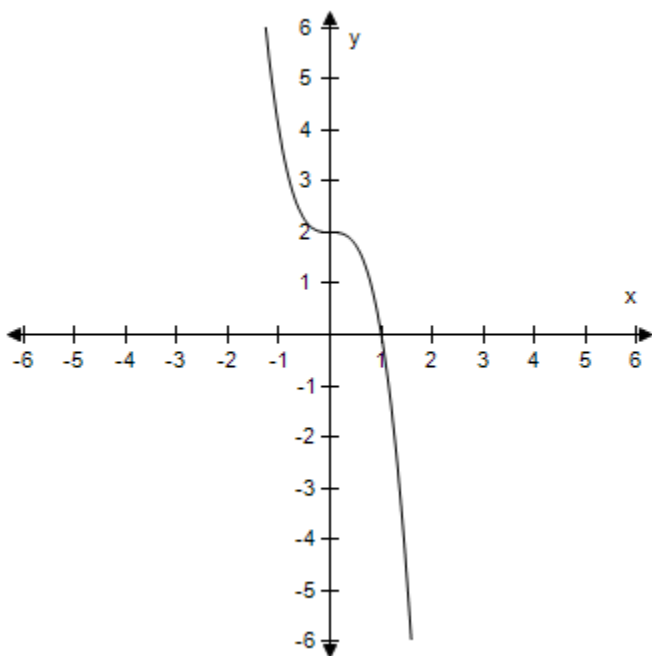
1. A roof has a rise of 5 feet for every horizontal change of 7 feet (see figure). Find the inclination of the roof. Round your answers to one decimal place.



$$a = 5, b = 7$$

2. Graphically estimate the x - and y -intercepts of the graph.

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



3. The parent function $f(x) = \sqrt{x}$ is related to g . Describe the sequence of transformations from f to g .

$$g(x) = \sqrt{x-3}$$

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4. From the graph of the quadratic function $f(x) = -x^2 - 4x - 9$, determine the equation of the axis of symmetry.

5. Find the distance between the point and the line. Round your answer to four decimal places.

Point Line

$$(5, 6) \quad 7x + y = 1$$

6. Write an equation for the function that is described by the following characteristics.

The shape of $f(x) = x^2$, but moved eight units down, two units to the left, and then reflected in the x -axis.

7. Find the inclination θ (in degrees) of the line with a slope of m . Round your answer to one decimal places.

$$m = 0.6666666667$$

8. Find all real value of x such that $f(x) = 0$.

$$f(x) = \frac{8x + 3}{5}$$

9. Evaluate $g(s + 10)$ if $g(y) = 11 - 4y$.

10. Use algebraic tests to check the following for symmetry with respect to the axes and the origin.

$$10x + 4y^8 = 0$$

11. Select the graph of g .

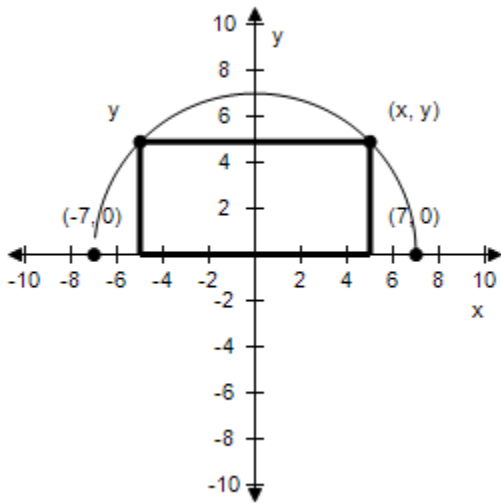
$$g(x) = 5(x - 4)^3$$

12. Find the value(s) of x for which $f(x) = g(x)$.

$$f(x) = x^2 + 4x - 26 \quad g(x) = 7x - 8$$

13. A rectangle is bounded by the x -axis and the semicircle $y = \sqrt{49 - x^2}$ (see figure). Select the area A of the rectangle as a function of x , and determine the domain of the function.

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14. Determine the quadrant(s) in which (x, y) is located so that the condition(s) is (are) satisfied.

$$x > 3 \text{ and } y < 0$$

15. Find the angle θ (in radians and degrees) between the lines. Round your answer to four decimal places for radians and round your answer to one decimal places for degree.

$$x - y = 10$$

$$3x - 2y = 1$$

Chapter 2**Answer Key**

1. $\theta \approx 35.5^\circ$

2. x -intercept: (1, 0) y -intercept: (0, 2)

3. Horizontal shift three units to the right.

4. $x = -2$

5. $d \approx 5.7540$

6. $g(x) = 8 - (x + 2)^2$

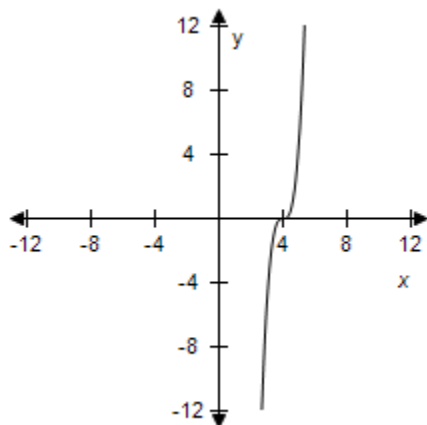
7. $\theta \approx 33.7^\circ$

8. $x = -\frac{3}{8}$

9. $g(s + 10) = -29 - 4s$

10. Symmetric with respect to the x -axis.

11.



12. $x = -3, 6$

13. $A(x) = 2|x|\sqrt{49 - x^2}, -7 \leq x \leq 7$

14. Quadrant IV

15. $\theta \approx 0.0588$ radians $\approx 3.4^\circ$

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