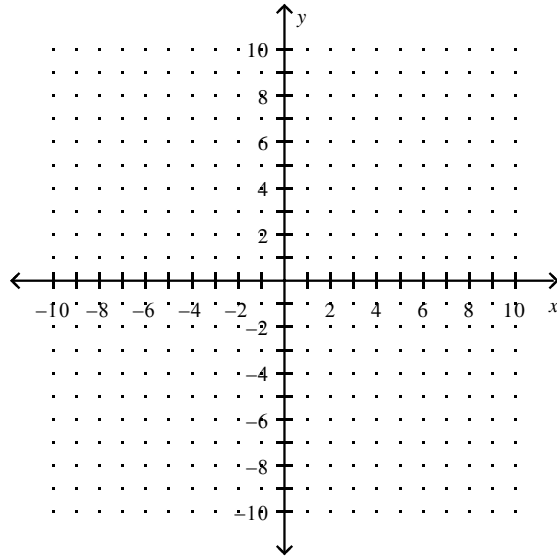


Homework – Transformations of Parent Graphs #1

For each equation, make an  $x/y$  chart and graph the equation.

1.  $y = 2|x + 1| - 4$

Domain:

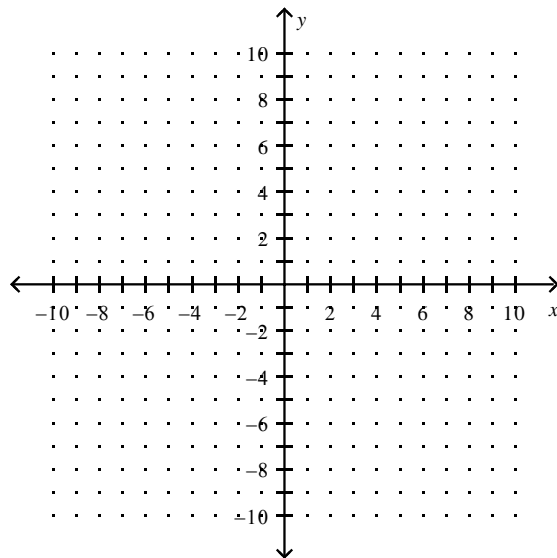


Range:

Describe the Transformation in Words:

2.  $y = -(x + 6)^3 + 3$

Domain:



Range:

Describe the Transformation in Words:

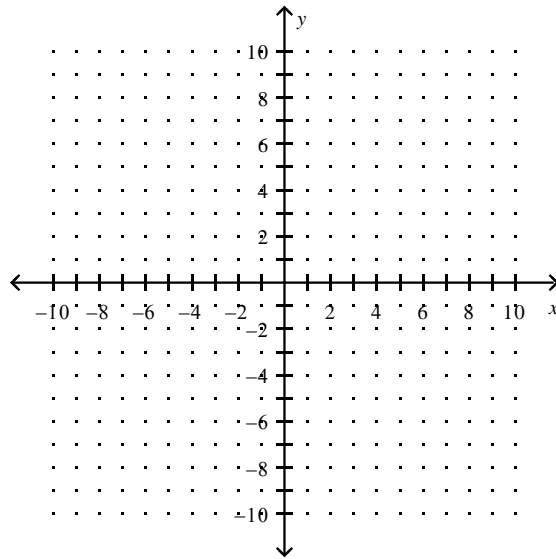
3. Write an equation for  $y = \sqrt{x}$  that has been translated 7 units right, 8 units down, and vertically stretched by a factor of 3.

4. Write an equation for  $y = x^3$  that has been translated 12 units up, vertically compressed by a factor of  $\frac{1}{3}$  and reflected over the  $x$ -axis.

5. Write an equation for  $y = |x|$  that has been translated 9 units right and reflected over the  $x$ -axis.

6.  $y = 2\sqrt{x - 3} - 4$

Domain:



Range:

Describe the Transformation in Words:

7. Explain the difference between the graphs of  $y = \frac{1}{x}$  and  $y = 4\left(\frac{1}{x + 5}\right) + 7$ .

8. Given  $f(x) = 2x - 7$ , complete the following:

a. Compute  $f(0)$

b. Solve  $f(x) = 0$

c. What do the answers to parts (a) and (b) tell you about the graph of  $f(x)$ ?

9. Compute each of the following values for  $f(x) = \frac{1}{x - 2}$

a.  $f(2.5)$

b.  $f(1.75)$

c.  $f(2)$

d. Why didn't part c have an answer?

## Homework – Transformations of Parent Graphs #1

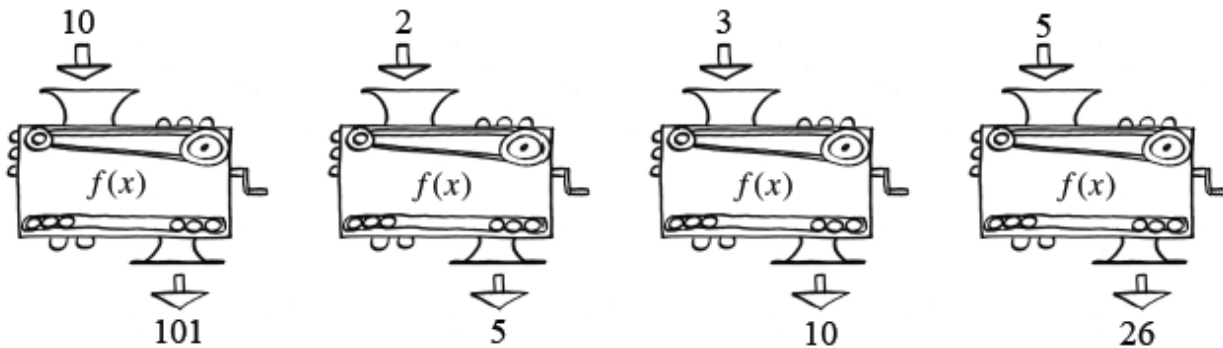
10. Consider the equations  $y = 3(x - 1)^2 - 5$  and  $y = 3x^2 - 6x - 2$ .

a. Verify that they are equivalent by creating a table for each equation.

b. Show algebraically that these two equations are equivalent by starting with one form and showing how to get the other.

c. Notice that the value for  $a$  is 3 in both forms of the equation, but that the numbers for  $b$  and  $c$  are different from the numbers for  $h$  and  $k$ . Why do you think the value for  $a$  would be the same number in both forms of the equation?

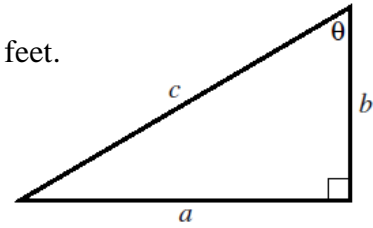
11. Find the equation for this machine.



12. Find the point where  $y = 3x - 1$  intersects  $2y + 5x = 53$

## Homework – Transformations of Parent Graphs #1

13. The dimensions of the right triangle shown at the right are given in feet.  
What is  $\sin \theta$ ?



<b>F.</b> $\frac{a}{b}$	<b>G.</b> $\frac{a}{c}$	<b>H.</b> $\frac{b}{c}$	<b>J.</b> $\frac{b}{a}$	<b>K.</b> $\frac{c}{a}$
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14. In a basketball passing drill, 5 basketball players stand evenly spaced around a circle. The player with the ball (the passer) passes it to another player (the receiver). The receiver cannot be the player to the passer's immediate right or left and cannot be the player who last passed the ball. A designated player begins the drill as the first passer. This player will be the receiver for the first time on which pass of the ball?

<b>A.</b> 4th	<b>B.</b> 5th	<b>C.</b> 6th	<b>D.</b> 10th	<b>E.</b> 24th
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15. Lines  $p$  and  $n$  lie in the standard  $(x,y)$  coordinate plane. An equation for line  $p$  is  $y = 0.12x + 3,000$ . The slope of line  $n$  is 0.1 greater than the slope of line  $p$ . What is the slope of line  $n$ ?

<b>F.</b> 0.012	<b>G.</b> 0.02	<b>H.</b> 0.22	<b>J.</b> 1.2	<b>K.</b> 300
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16. The expression  $-8x^3(7x^6 - 3x^5)$  is equivalent to:

<b>A.</b> $-56x^9 + 24x^8$	<b>B.</b> $-56x^9 - 24x^8$	<b>C.</b> $-56x^{18} - 24x^{15}$	<b>D.</b> $-56x^{18} + 24x^{15}$	<b>E.</b> $-32x^4$
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17.  $-3|-6 + 8| = ?$

<b>F.</b> -42	<b>G.</b> -6	<b>H.</b> -1	<b>J.</b> 6	<b>K.</b> 42
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