

Name _____

Algebra 2 Unit 2 Test Review

1. The graph $y = |x|$ of is shifted up 6 units and right 2 units. What is the equation of the new graph?

2. The parent function $y = \frac{1}{x}$ is translated such that its horizontal asymptote is $y = 3$ and its vertical asymptote is $x = -1$. What is the equation of the translated graph?

3. What is the effect of absolute value on the x in the function $y = 2^x$?

4. How is the graph of $y = a\sqrt{x-h} + k$ changed when a , h , or k is changed?

5. Given the equation $y = 3x^2 + 5x - 1$, write the equation of the translation that opens in the same direction, has the same shape, but is four units higher.

6. What is the inverse of $y = \frac{2}{5}x^2 + 1$?

7. Write the equation of the inverse of:

$$y = \frac{x+3}{5}$$

8. Consider $y = \log(x)$ and $y = \log(x+a) + h$. How does changing the h affect the parent function? How does the a affect it?

9. How does the graph of $y - 7 = \frac{1}{x}$ affect the parent function of $y = \frac{1}{x}$?

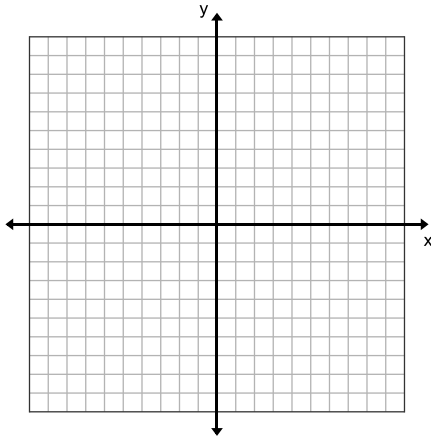
- A. It shifts 7 units to the right.
- B. It shifts 7 units up.
- C. It shifts 7 units to the left.
- D. It shifts 7 units down.

10. How does the graph of $y = (x+3)^2 - 5$ differ from the graph of the parent function $y = x^2$?

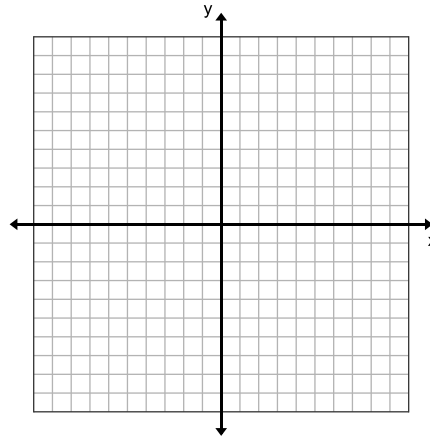
11. What is the domain of $y = \sqrt{x+3} - 4$?

12. What is the domain of $y + 6 = 2^x$?

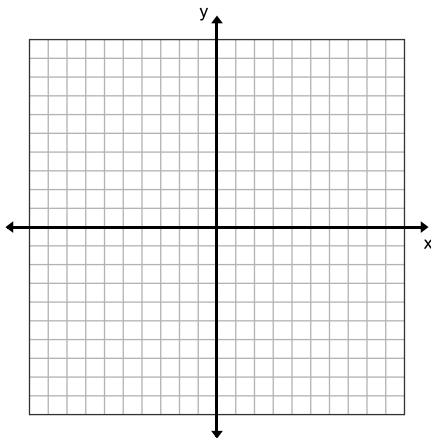
13. Graph the parent function and its inverse for the function $y = 2^x$.



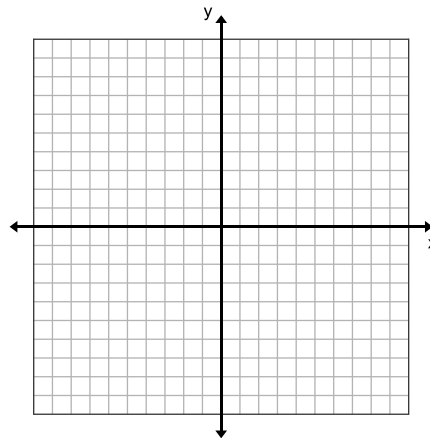
14. Graph the parent function and its inverse for the function $y = |x|$.



15. Graph the parent function and its inverse for the function $y = x^2$.



16. Graph the parent function and its inverse for the function $y = \log x$.



17. Keoni drops an object from the top of a building that is 225 feet tall and calculates the time it takes for the object to reach the ground. In general how is the graph changed if the building is 450 feet tall instead?

18. The inverse of a function can be written as $f^{-1}(x)$. For the table shown below, write the table for $f^{-1}(x)$.

$f(x)$	
x	y
-1	2
3	0
5	-1
2	2
a	b

$f^{-1}(x)$	
x	y

19. Jerod is driving at a constant rate of 65 mph from Weatherford to Fort Worth, which is a distance of 25 miles. If the distance Jerod has traveled in miles is function of time in hours he has been driving, what is an appropriate domain and range for this problem situation?

20. What is the domain of $y = \log_{10}(x - 5)$?