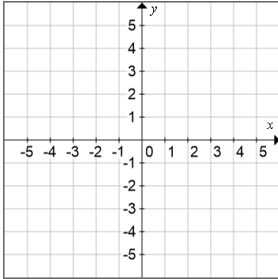


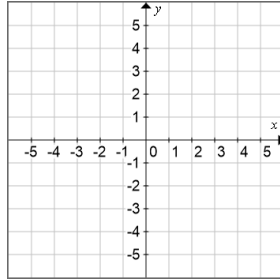
1.5 Worksheet A | Transformations of Functions

Graph the parent functions. Make sure they pass through all “key points.”

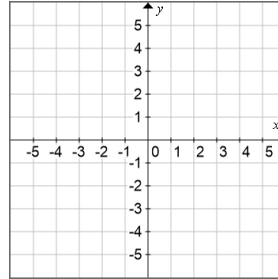
1. $f(x) = x^2$



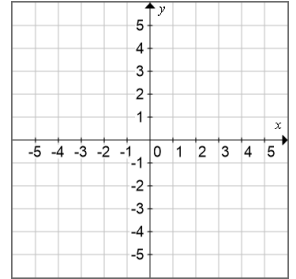
2. $g(x) = x^3$



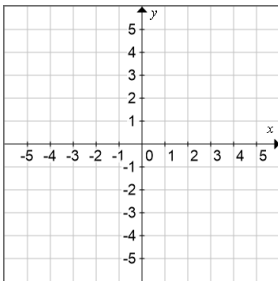
3. $h(x) = \sqrt{x}$



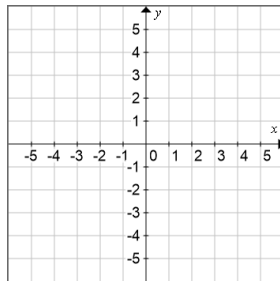
4. $f(x) = \sqrt[3]{x}$



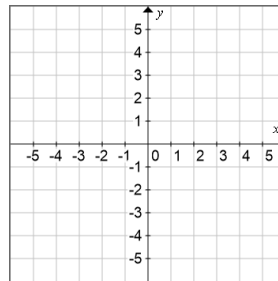
5. $g(x) = |x|$



6. $h(x) = \frac{1}{x}$



7. $f(x) = \frac{1}{x^2}$



Describe what the given transformations do to the coordinates of the function. Answer in a complete sentence.

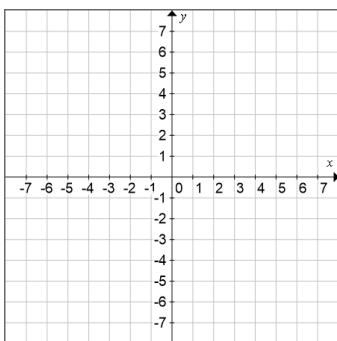
8. $f(x + 4) + 6$

9. $g(x - 5) - 3$

Identify the function's parent function. Graph the functions using transformations, and draw the “key points” with its graphs. Draw any asymptotes as dotted lines.

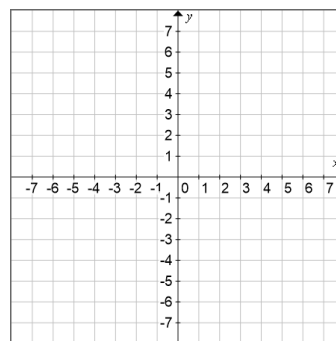
10.
 $y = |x + 5| - 6$

Parent:



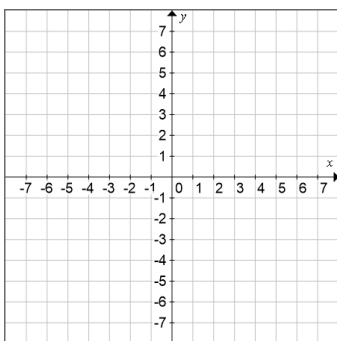
11.
 $f(x) = \sqrt{x - 1} - 5$

Parent:



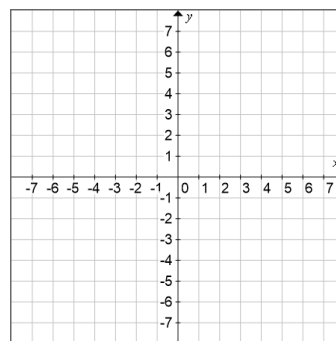
12.
 $g(x) = (x + 3)^2 + 4$

Parent:



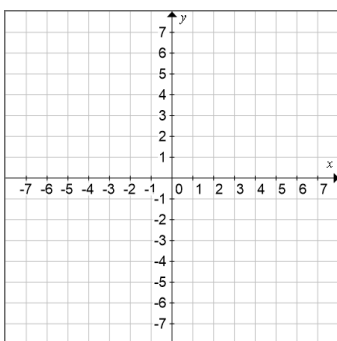
13.
 $y = (x - 4)^3 - 5$

Parent:



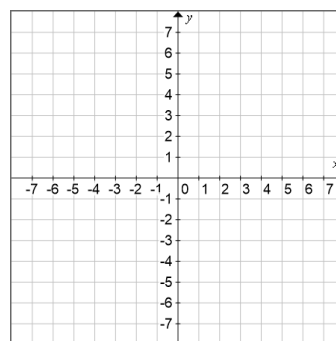
14. $y = \frac{1}{x-4} + 3$

Parent:



15.
 $h(x) = \frac{1}{(x+2)^2} - 6$

Parent:



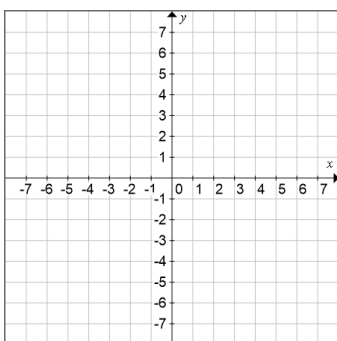
Graph the functions using transformations, and draw the “key points” with its graphs. Give the function's domain and range in interval notation. Draw any asymptotes as dotted lines, and give their equations.

16. $y = |x - 3| - 3$

D:

R:

A:

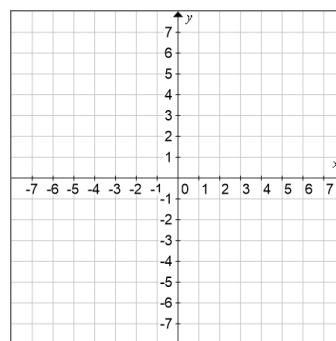


17.
 $y = \sqrt[3]{x + 2} + 5$

D:

R:

A:



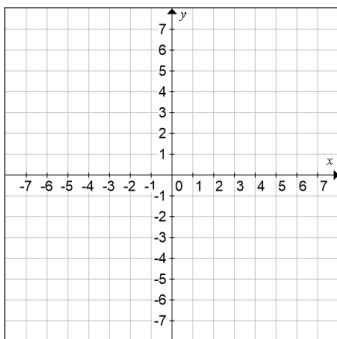
Graph the functions using transformations, and draw the “key points” with its graphs. Give the function’s domain and range in interval notation. Draw any asymptotes as dotted lines, and give their equations.

18. $y = \frac{1}{x+3} - 2$

D:

R:

A:



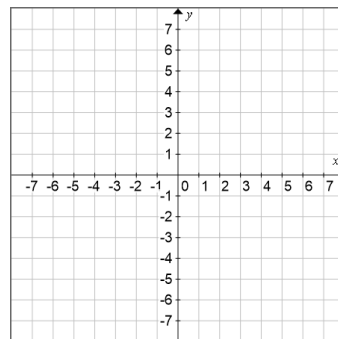
19.

$y = \sqrt{x+6} - 4$

D:

R:

A:

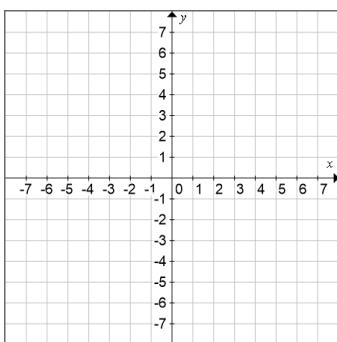


20. $y = \frac{1}{(x-1)^2} + 3$

D:

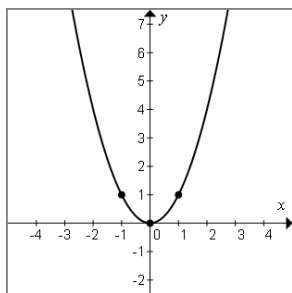
R:

A:

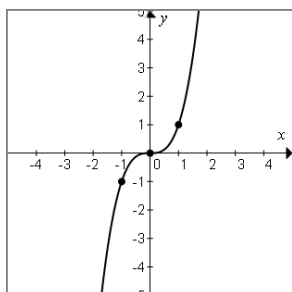


Answer Key

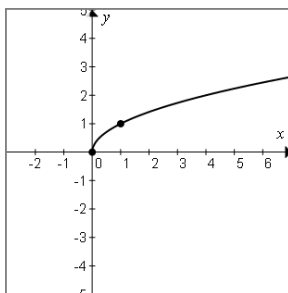
1.



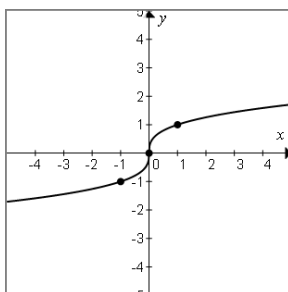
2.



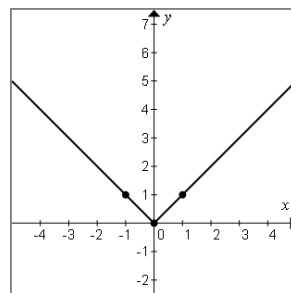
3.



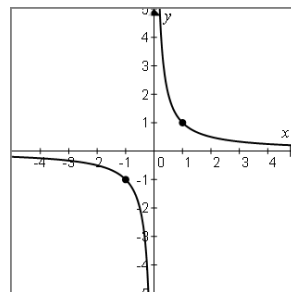
4.

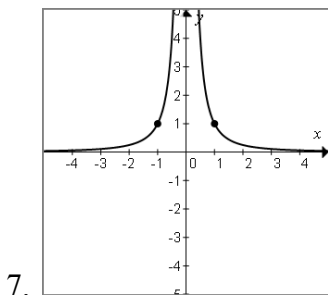


5.



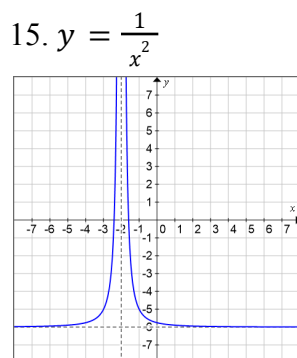
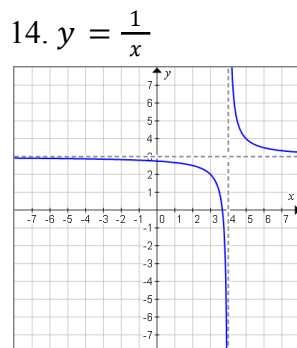
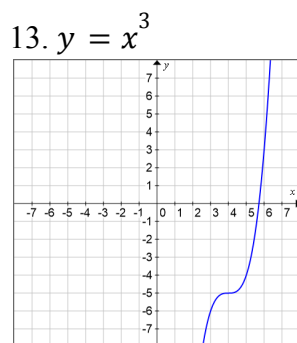
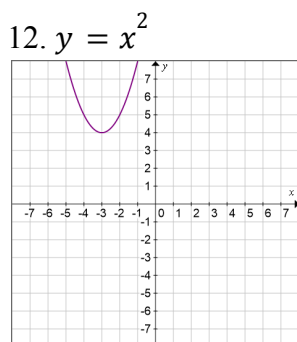
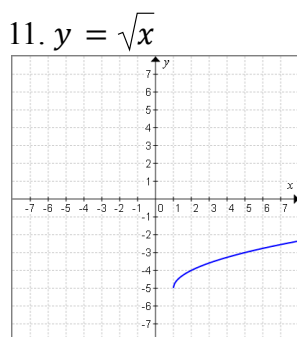
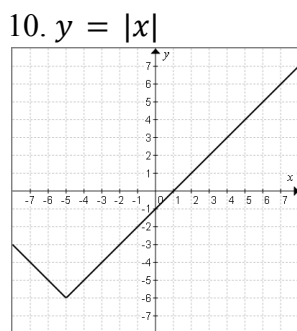
6.



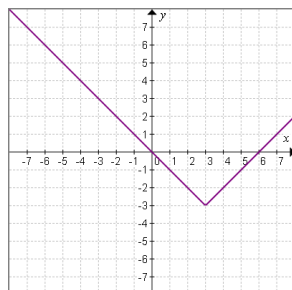


8. The x -coordinates will decrease by 4, and the y -coordinates will increase by 6.

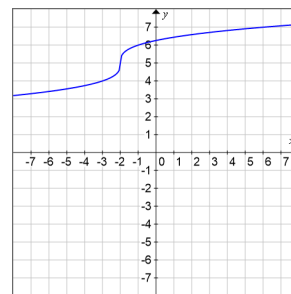
9. The x -coordinates will increase by 5, and the y -coordinates will decrease by 3.



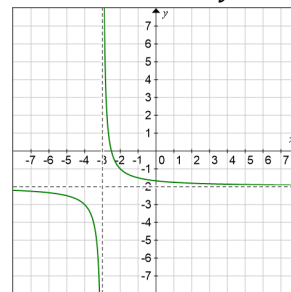
16. D: $(-\infty, \infty)$
R: $[-3, \infty)$
A: None



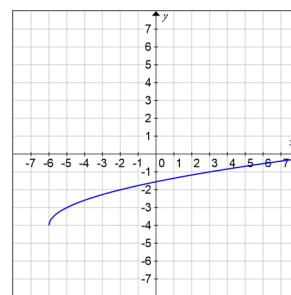
17. D: $(-\infty, \infty)$
R: $(-\infty, \infty)$
A: None



18. D: $(-\infty, -3) \cup (-3, \infty)$
R: $(-\infty, -2) \cup (-2, \infty)$
A: $x = -3$ and $y = -2$



19. D: $[-6, \infty)$
R: $[-4, \infty)$
A: None



20. D: $(-\infty, 1) \cup (1, \infty)$
R: $(3, \infty)$
A: $x = 1$ and $y = 3$

