Name: **KEY**

Quiz 2.1.1-2.2.2 Practice Quiz and Review

Factor the following expressions in questions 1-4.

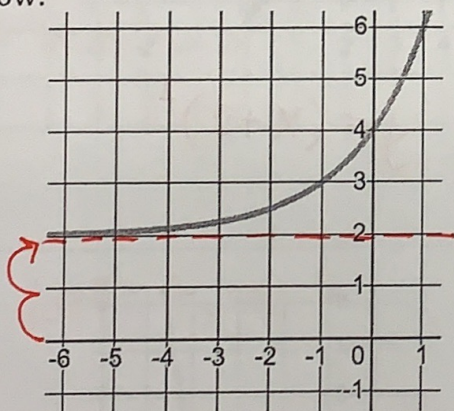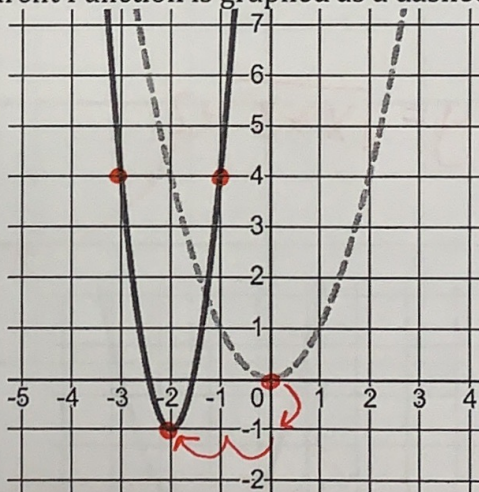| 1. $x^2 + 3x - 4$	2. $x^2 - 7x - 18$	3. $x^2 - 9x + 8$	4. $x^2 - 16x + 63$
$4 \cdot -1$	$-9 \cdot 2$	$-8 \cdot -1$	$-9 \cdot -7$
$(x+4)(x-1)$	$(x-9)(x+2)$	$(x-8)(x-1)$	$(x-9)(x-7)$

5. The function $f(x) = 2(2)^x$ was replicated with $f(x) + k$ resulting in the function graphed below:

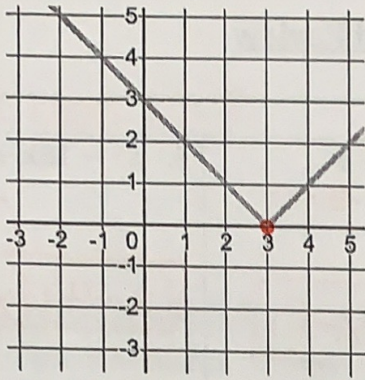What is the k value?

$k = 2$ (moved up 2)

6. Identify ALL the transformations that have occurred to the parent function below? (Parent Function is graphed as a dashed line)

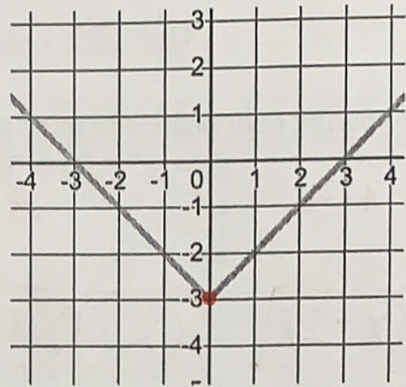Down 1, Left 2, vertical stretch of 5

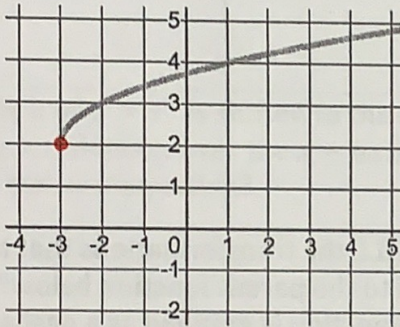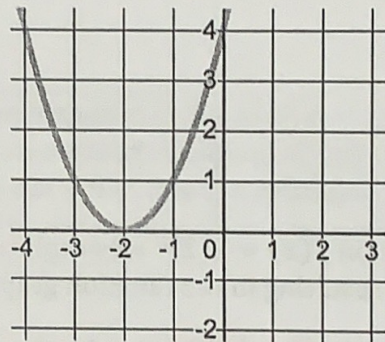Write an equation for the graphs given in questions 7-12.

7.

$$y = |x - 3|$$
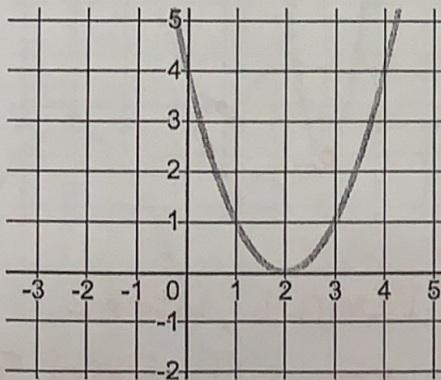
8.

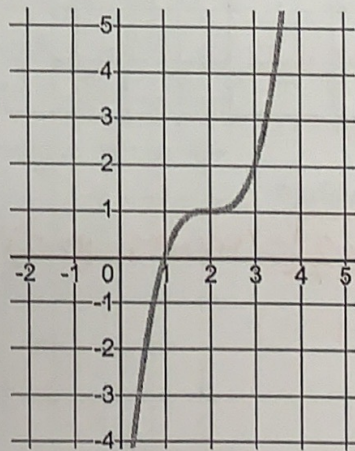$$y = |x| - 3$$

9.

$$y = \sqrt{x + 3} + 2$$

10.

$$y = (x + 2)^2$$

11.

$$y = (x - 2)^2$$

12.

$$y = (x - 2)^3 + 1$$

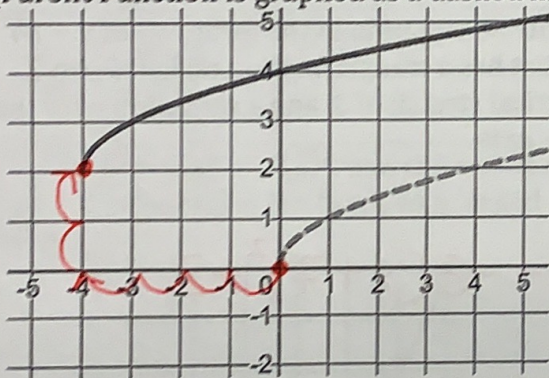| State the transformation of the following equations		
13. $y = (x - 2)^3$ Right 2	14. $y = x^3 - 2$ Down 2	15. $y = (x + 2)^3 - 2$ Left 2, Down 2
16. $y = \frac{1}{x} + 4$ up 4	17. $y = \frac{1}{x} - 4$ down 4	18. $y = \frac{1}{x-4}$ Rignt 4

19. Identify ALL the transformations that have occurred to the parent function below? (Parent Function is graphed as a dashed line)

Left 4, up 2

20. Graph the locator point (h, k) of the function $f(x) = \sqrt[3]{x + 3} - 2$ then draw in a sketch of the shape of that graph.
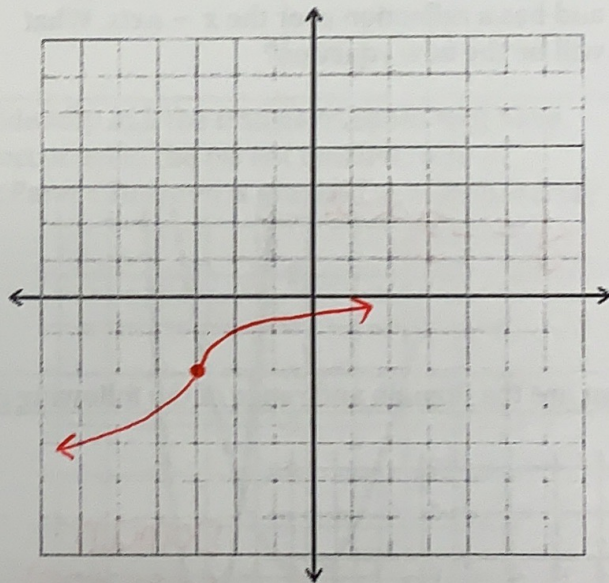
$(h, k) = (-3, -2)$

|	
21. What is the name of the parent function whose transformed graph is: $y = \sqrt[3]{x+2}$? **Cube root**	22. Write an equation in the form $y = (a)\frac{1}{x-h} + k$ that has a transformation of: Left 1, Up 4, and a Vertical stretch of 3. $y = (3)\frac{1}{x+1} + 4$
23. Write an equation in the form $y = (a)2^{x-h} + k$ that has a transformation of: Right 10, Up7, and a Vertical compression of 0.13. $y = (0.13)2^{x-10} + 7$	24. Write an equation in the form $y = a(x-h)^3 + k$ that has a transformation of: Left 2, Down 8, and a reflection over the $x - axis$. $y = -(x-2)^3 - 8$
25. The graph of $y = 3^x$ is shifted to the right 2 and has a reflection over the $x - axis$. What will be the new equation? $y = -3^{x-2}$	26. Write an equation in the form $y = a(x-h)^2 + k$ that has a transformation of: Left 7, Up 2, vertical stretch of 3, and a reflection over the $x - axis$ $y = -3(x+7)^2 + 2$

What are the domain and range of the following graphs?
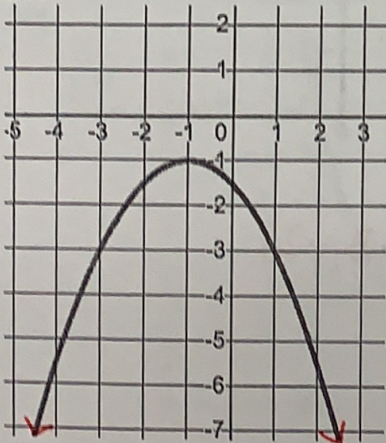
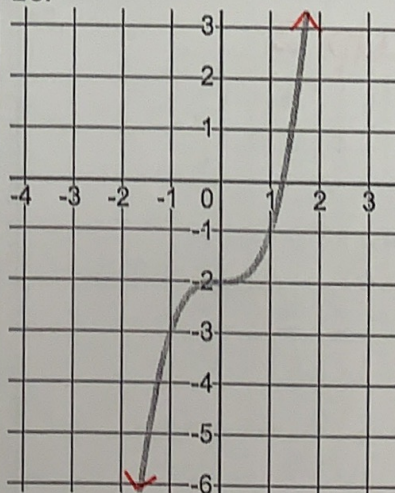|	
27. Domain: $(-\infty, +\infty)$ Range: $(-\infty, -1]$	28. Domain: $(-\infty, +\infty)$ Range: $(-\infty, +\infty)$