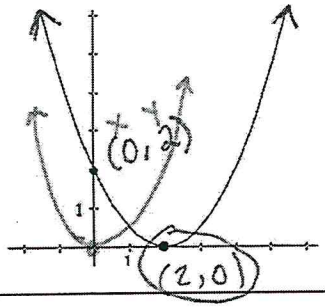
Directions: For the following graphs name the name of the function family represented, write the equation to represent the transformed function and describe *all* of the transformations. SHOW ALL WORK WHEN NECESSARY.

11) Parent Function: Quadratic; $y = x^2$



Equation:

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

$2 = a(0-2)^2$

$2 = a(-2)^2$

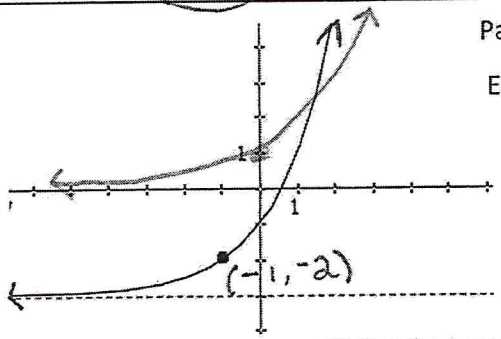
$\frac{2}{4} = \frac{4a}{4}$

$\frac{1}{2} = a$

$y = \frac{1}{2}(x-2)^2$

Transformation(S): Compress by $\frac{1}{2}$, right 2

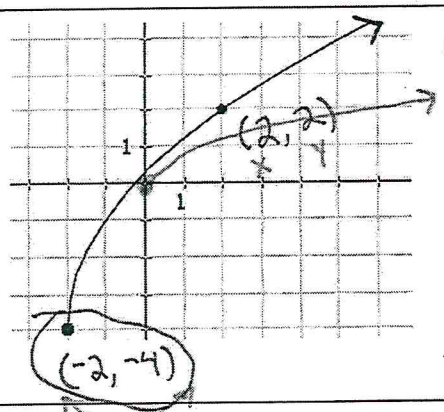
12) Parent Function: exponential growth; $y = 2^x$



Equation: $y = 2^{x+1} - 3$

Transformation(S): left 1, down 3

13) Parent Function: Square root; $y = \sqrt{x}$



Equation:

$y = a\sqrt{x+2} - 4$

$2 = a\sqrt{2+2} - 4$

$2 = a\sqrt{4} - 4$

$2 = 2a - 4$

$+4 \quad +4$

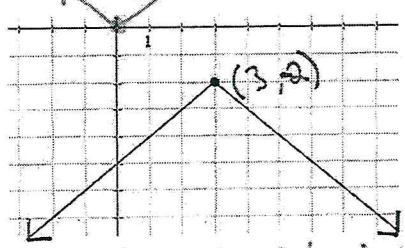
$\frac{6}{2} = \frac{2a}{2}$

$3 = a$

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

Transformation(S): Stretch by 3, left 2, down 4

14)

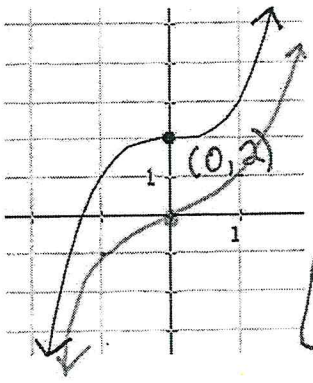


Parent Function: absolute value; $y = |x|$

Equation: $y = -|x-3| - 2$

Transformation(S): Right 3, down 2, reflect over the x-axis

15)



Parent Function: cubic; $y = x^3$

Equation: $y = x^3 + 2$

Transformation(S): up 2