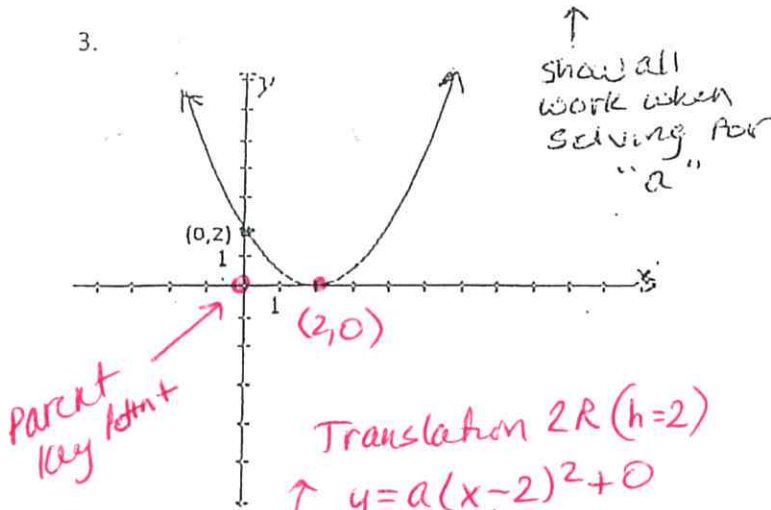


Describe the transformations and write the equation for the following graphs:

3.



Translation 2R ( $h=2$ )

$$y = a(x-2)^2 + 0$$

Parent  $y = x^2$

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

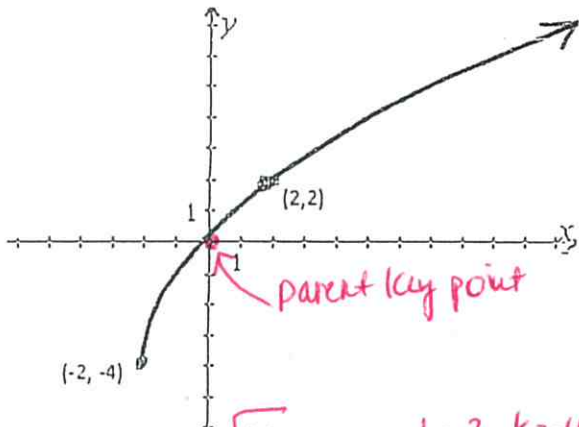
$$2 = a(-2)^2$$

$$2 = a(4) \quad a = \frac{1}{2}$$

Equation

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

5.



Parent  $y = \sqrt{x}$

Translation 2L, 4D

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

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

(2, 2)  $2 = a\sqrt{2+2} - 4$

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

$$2 = 2a - 4$$

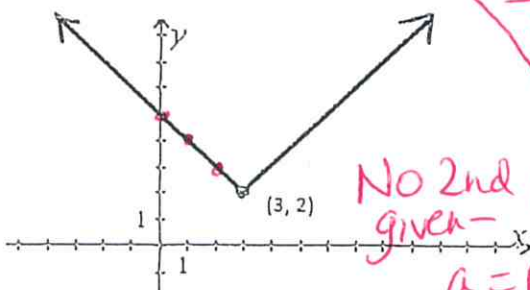
$$+4 \quad +4$$

$$\frac{2a = 6}{2} \quad a = 3$$

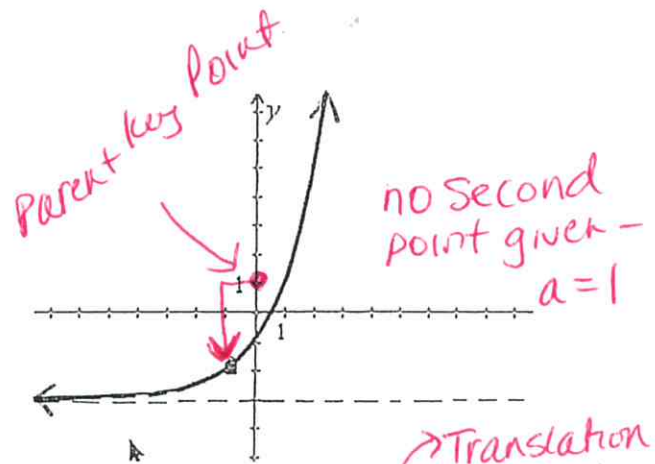
Equation

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

7.



4.



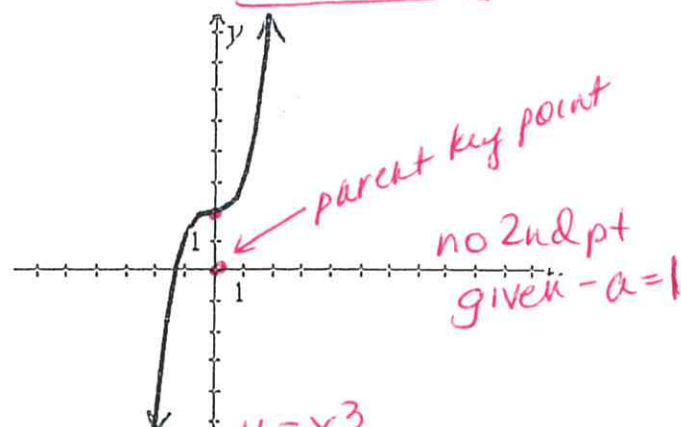
Parent  $y = 2^x$

Translation 1L, 3D ( $h=-1, k=-3$ )

Equation

$$y = 2^{x-1} - 3$$

6.



Parent  $y = x^3$

Translation 2up  $k=2$

Equation

$$y = x^3 + 2$$

Parent  $y = |x|$

Translation 3R, 2U

$h=3, k=2$

Equation

$$y = |x-3| + 2$$