

## Practice Problems

$$\textcircled{1} \quad y = 2\sqrt{x+1} - 3$$

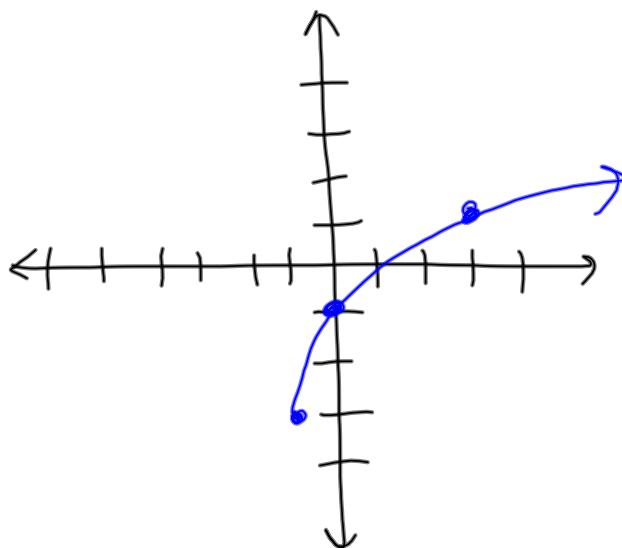
$$(h, k) \rightarrow (-1, -3)$$

x	y
0	-1
3	1

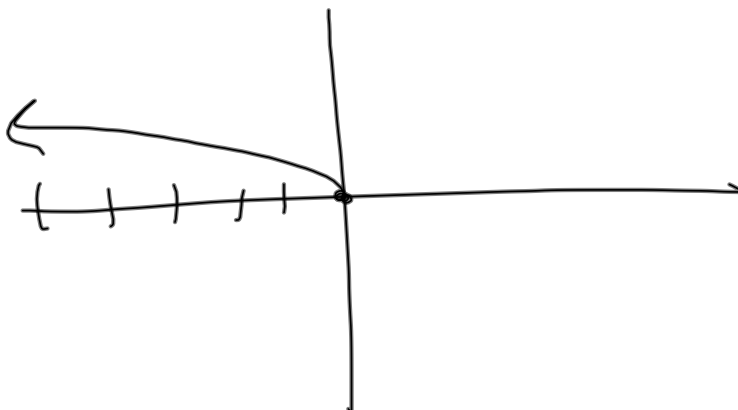
$$\begin{aligned} 2\sqrt{0+1} - 3 \\ 2\sqrt{1} - 3 \\ 2 \cdot 1 - 3 \\ 2 - 3 \end{aligned}$$

3 | 1

$$\begin{aligned} 2\sqrt{3+1} - 3 \\ 2\sqrt{4} - 3 \\ 2 \cdot 2 - 3 = 4 - 3 \end{aligned}$$



$$y = \sqrt{\quad}$$



$$y = -\frac{1}{2} \sqrt{x+2} + 1$$

$$(h,k) \rightarrow (-2, 1)$$

x	y
-1	$\frac{1}{2}$
2	0

$$-\frac{1}{2} \sqrt{-1+2} + 1$$

$$-\frac{1}{2} \sqrt{1} + 1$$

$$-\frac{1}{2} + 1 = \frac{2}{2}$$

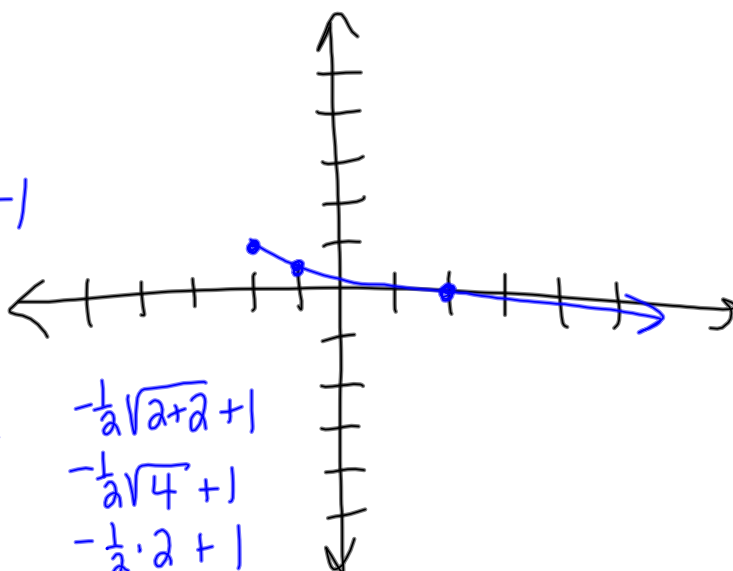
$$\frac{1}{2}$$

$$-\frac{1}{2} \sqrt{a+2} + 1$$

$$-\frac{1}{2} \sqrt{4} + 1$$

$$-\frac{1}{2} \cdot 2 + 1$$

$$-1 + 1$$



$$y = -\frac{2}{3}\sqrt{\underbrace{x-3}_4} - 3$$

$$(h, k) \rightarrow (3, -3)$$

x	y
4	$-3\frac{2}{3}$

$$-\frac{2}{3}\sqrt{4-3} - 3$$

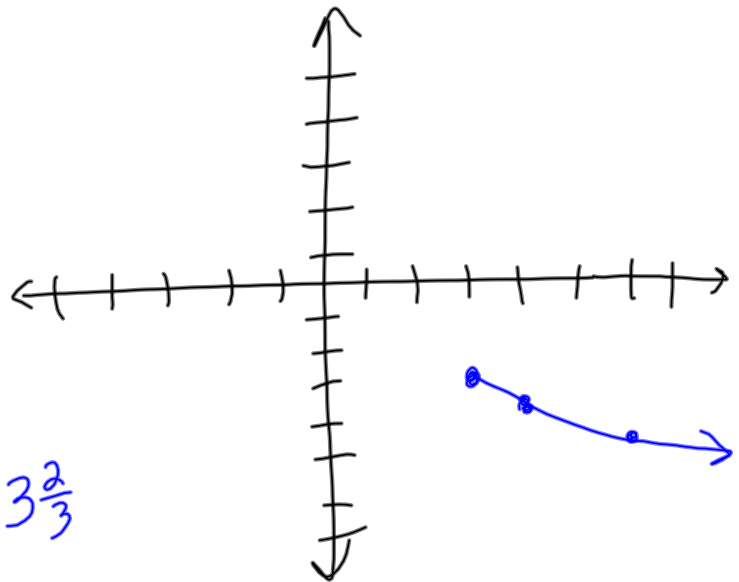
$$-\frac{2}{3}\sqrt{1} - 3$$

$$-\frac{2}{3} - 3 = -3\frac{2}{3}$$

7	$-4\frac{1}{3}$
---	-----------------

$$-\frac{2}{3}\sqrt{7-3} - 3$$

$$-\frac{2}{3}\sqrt{4-3} = -\frac{2}{3} \cdot 2 - 3 = -\frac{4}{3} - 3 = -1\frac{1}{3} - 3 = -4\frac{1}{3}$$

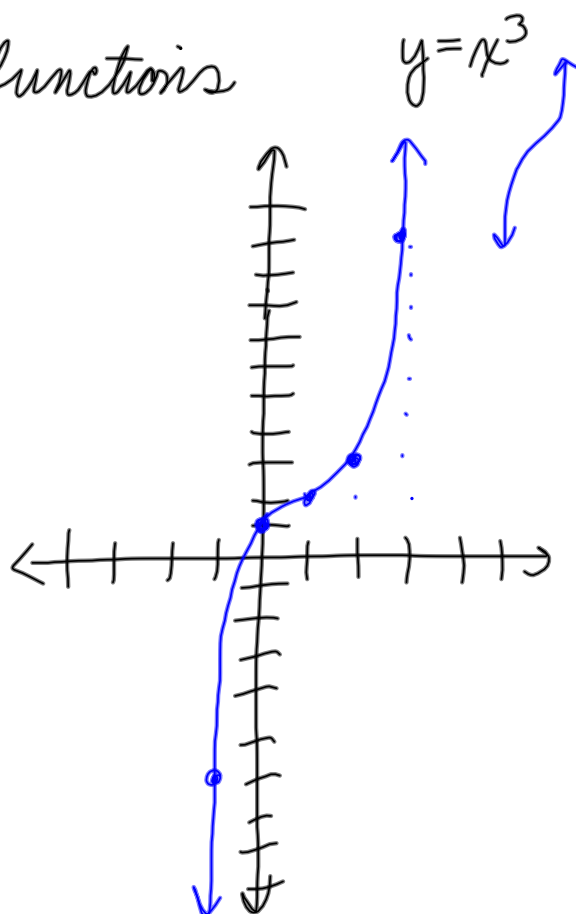


Graph cubic functions

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

$$(h,k) \rightarrow (1,2)$$

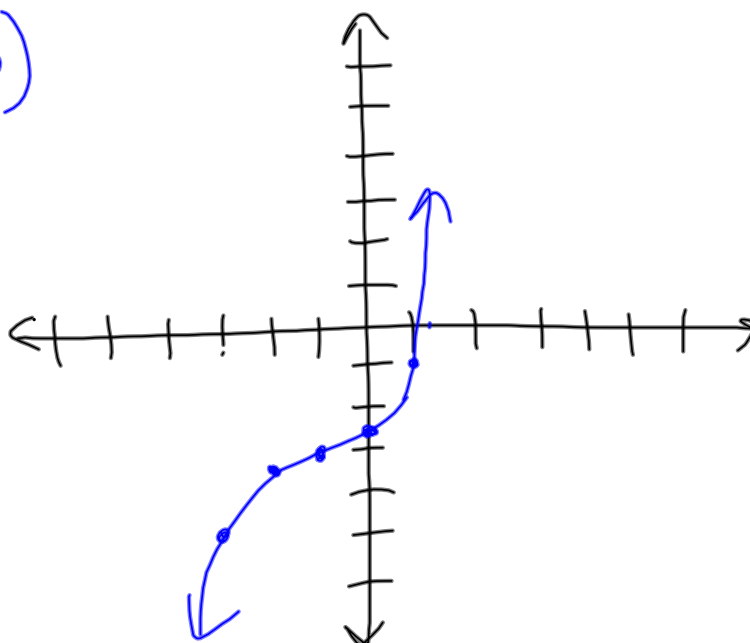
$x$	$y$	
2	3	$(2-1)^3 + 2$ $1^3 + 2$ $1 + 2$
3	10	$(3-1)^3 + 2$ $2^3 + 2$ $8 + 2$ 10



$$y = \frac{1}{4}(x+1)^3 - 3$$

$$(h,k) \rightarrow (-1, -3)$$

$x$	$y$
0	$-\frac{27}{4}$ $\frac{1}{4}(0+1)^3 - 3$ $\frac{1}{4}(1)^3 - 3$ $\frac{1}{4} \cdot 1 - 3$ $\frac{1}{4} - 3$ $-\frac{3}{4}$
1	-1



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

$(h, k) (-2, -3)$

Cube Root  
 $y = \sqrt[3]{x}$

