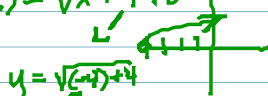


7.3 Square Root Functions & Inequalities (pg 425)

Ex#1: $f(x) = \sqrt{x+4} + 0$

$$\begin{array}{r} x+4 \geq 0 \\ -4 -4 \end{array}$$



D: $x \geq -4$

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

R: $y \geq 0$

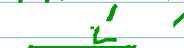
$f(x) = a\sqrt{x-h} + k$

wide > narrow < $k = \uparrow \downarrow$

$$y = \sqrt{x-a} + 0$$

1b) $f(x) = \sqrt{x+6} + 2$

$$\begin{array}{r} x+6 \geq 0 \\ -6 -6 \end{array}$$



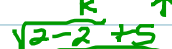
D: $x \geq -6$

$$y = \sqrt{x+6} + 2$$

R: $y \geq 2$

Ex#2a: $y = \sqrt{x-2} + 5$

$$\begin{array}{r} x-2 \geq 0 \\ +2 +2 \end{array}$$



D: $x \geq 2$

$$y = \sqrt{x-2} + 5$$

R: $y \geq 5$

2b) $y = -2\sqrt{x+3} - 1$

down wide L ↓

$$\begin{array}{r} x+3 \geq 0 \\ -3 -3 \end{array} \quad \begin{array}{r} \sqrt{-3+3} - 1 \\ \sqrt{0} - 1 \end{array}$$

D: $x \geq -3$ R: $y \leq -1$

2b) $f(x) = \frac{1}{4}\sqrt{x-5} + 3$

$$\begin{array}{r} x-5 \geq 0 \\ +5 +5 \end{array}$$



D: $x \geq 5$

$$y = \frac{1}{4}\sqrt{x-5} + 3$$

R: $y \geq 3$

Ex#4: $y < \sqrt{x-4} - 6$

$$\begin{array}{r} x-4 \geq 0 \\ +4 +4 \end{array} \quad \text{R} \downarrow$$

D: $x \geq 4$



7.3 Square Root Functions & Inequalities (pg 425)

Ex#1: $f(x) = \sqrt{x+4} + 0$

$x+4 \geq 0$
 $-4 -4$

$y = \sqrt{(-4)+4}$
 $\sqrt{0}$

$D: x \geq -4$

$R: y \geq 0$

$f(x) = a\sqrt{x-h} + k$

wide > 1
 narrow < 1

$R: -$
 $L: +$

$y = \sqrt{x-0} + 0$

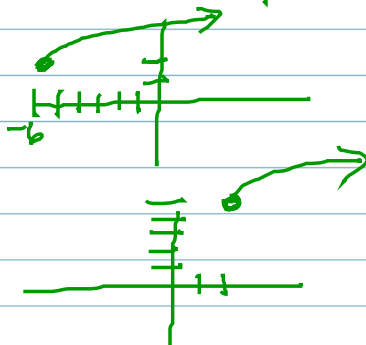
1b) $f(x) = \sqrt{x+6} + 2$

$x+6 \geq 0$
 $-6 -6$

$y = \sqrt{-6+6} + 2$
 $\sqrt{0} + 2$

$D: x \geq -6$

$R: y \geq 2$



Ex#2 a) $y = \sqrt{x-2} + 5$

$x-2 \geq 0$
 $+2 +2$

$y = \sqrt{2-2} + 5$
 $\sqrt{0} + 5$

$D: x \geq 2$

$R: y \geq 5$

2b) $y = -2\sqrt{x+3} - 1$

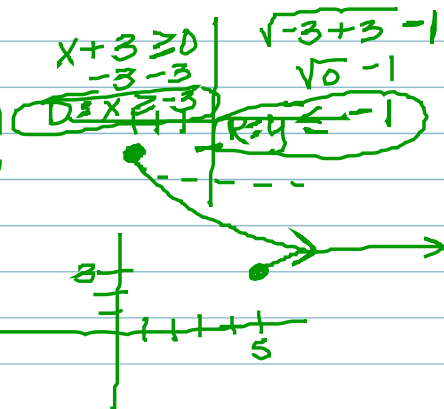
down
wide

$x+3 \geq 0$
 $-3 -3$

$y = -2\sqrt{-3+3} - 1$
 $-2\sqrt{0} - 1$

$D: x \geq -3$

$R: y \leq -1$



2B) $f(x) = \frac{1}{4}\sqrt{x-5} + 3$

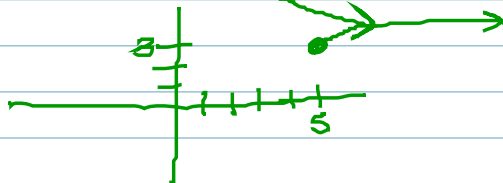
up
narrow

$x-5 \geq 0$
 $+5 +5$

$y = \frac{1}{4}\sqrt{5-5} + 3$
 $\frac{1}{4}\sqrt{0} + 3$

$D: x \geq 5$

$R: y \geq 3$



Ex#4: $y < \sqrt{x-4} - 6$

$x-4 \geq 0$
 $+4 +4$

$D: x \geq 4$

