

Day 76

7.8 Graphing Square Root and other radicals

Parent Function

Vertex Form

line
parabola (quadratic)
abs. value

$$y = x$$
$$y = a(x-h)^2 + k$$

$$y = x^2$$
$$y = |x|$$

$$y = a|x-h| + k$$

Square root $y = \sqrt{x}$

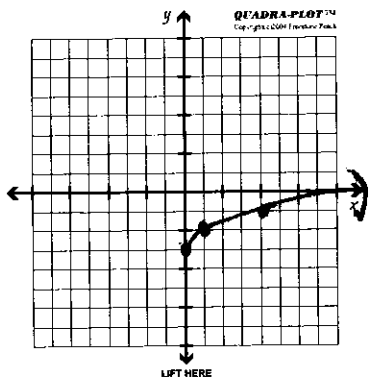
$$y = a\sqrt{x-h} + k$$

if a is negative - reflection

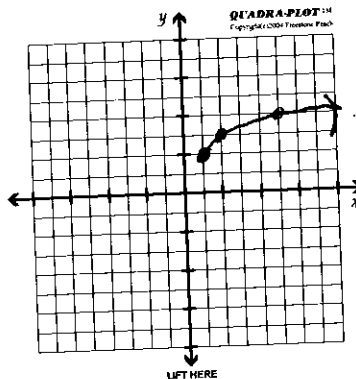
(h, k) vertex, or in a square root or cube root, it's the starting point

① $y = \sqrt{x} - 3$

shift down 3



(at least plot 3 points)



② $y = \sqrt{x-1} + 2$

right 1
up 2

$$x-1=0$$
$$+1 \quad +1$$
$$x=1$$

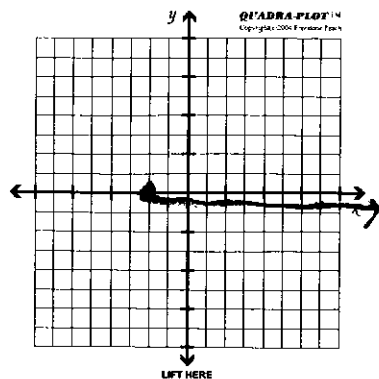
starting point (1, 2)

$D: [1, \infty)$
 $R: [2, \infty)$

③ $y = -\frac{1}{4}\sqrt{x+2}$

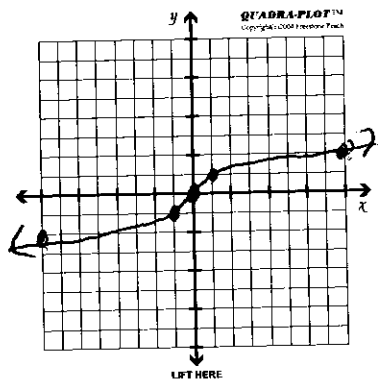
reflection left 2 starting point: $(-2, 0)$

$D: [-2, \infty)$ $R: (-\infty, 0]$



④ Cube Root

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



x	$\sqrt[3]{x}$
-8	$\sqrt[3]{-8} = -2$
-1	$\sqrt[3]{-1} = -1$
0	0
1	$\sqrt[3]{1} = 1$
8	$\sqrt[3]{8} = 2$

$D: (-\infty, \infty)$

$R: (-\infty, \infty)$

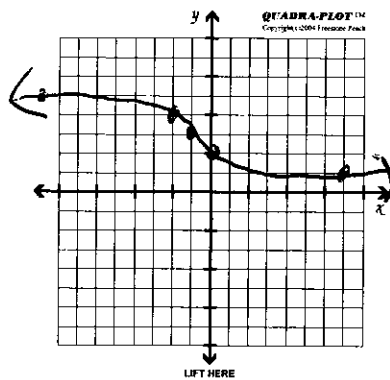
⑤ $y = 3 - \sqrt[3]{x+1}$

up 3

$x+1=0$
 $-1 -1$
 $x = -1$

left 1

reflection



$D: (-\infty, \infty)$

$R: (-\infty, \infty)$

p. 417-419

Graph, describe shifts, D, R

for (2-8 even, 15, 17, 19-21, 23)

71-76

10 graphs