Kuta Software - Infinite Algebra 2

Name Answer Key

Graphing Radicals

Date_____ Period____

Identify the domain and range of each.

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

Domain: $x \geq 2$
Range: $y \geq 5$

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

Domain: $x \geq -2$
Range: $y \geq -3$

3) $y = \sqrt[3]{x+1} - 4$

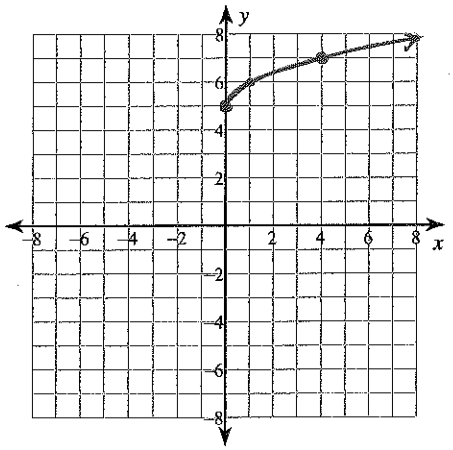
Domain: { All real numbers. }
Range: { All real numbers. }

4) $y = \sqrt[3]{x-1} - 1$

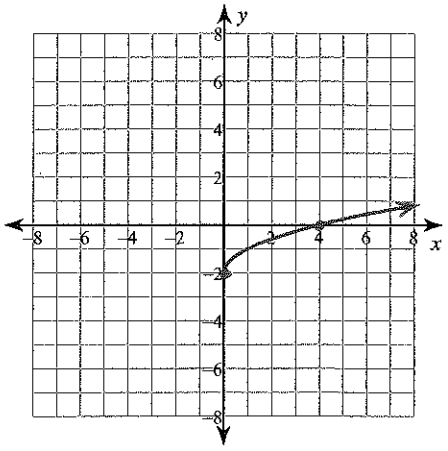
Domain: { All real numbers. }
Range: { All real numbers. }

Sketch the graph of each function.

5) $y = \sqrt{x} + 5$ vertex is (0, 5)



6) $y = \sqrt{x} - 2$ vertex is (0, -2)



x-intercept is

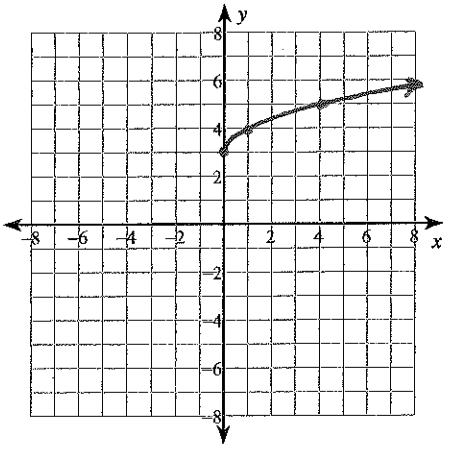
$0 = \sqrt{x} - 2$

$2 = \sqrt{x}$

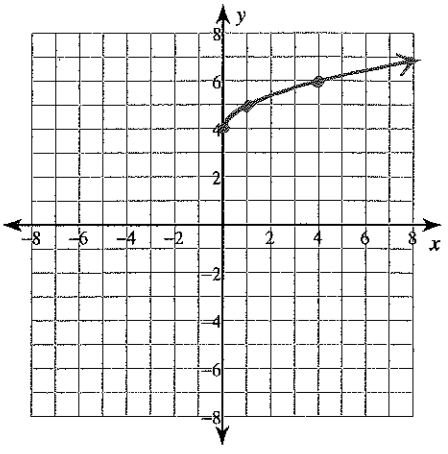
$2^2 = (\sqrt{x})^2$

$4 = x$

7) $y = 3 + \sqrt{x}$ vertex is (0, 3)

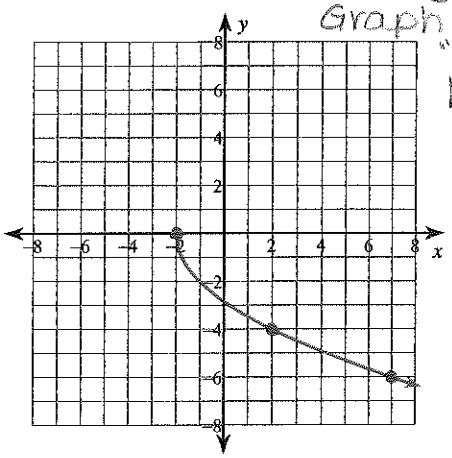


8) $y = \sqrt{x} + 4$ vertex is (0, 4)

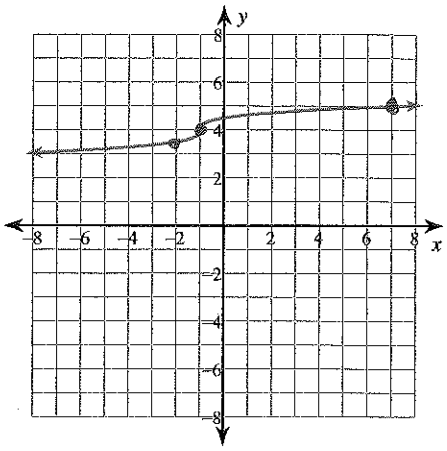


9) $y = -2\sqrt{x+2}$

Vertex is $(-2, 0)$
Graph is "flipped" horizontally
Steeper



10) $y = \frac{1}{2}\sqrt[3]{x+1} + 4$



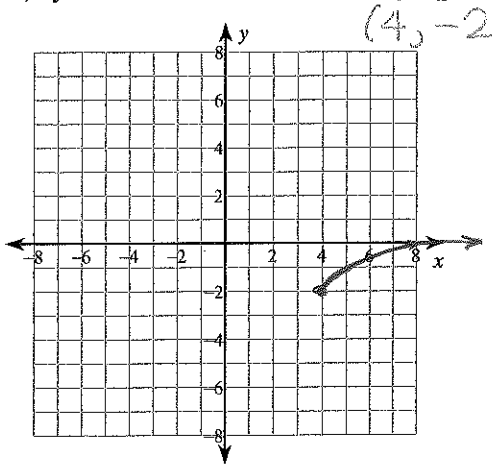
Vertex is $(-1, 4)$

try pts such as

x	y
7	$\frac{1}{2}\sqrt[3]{7+1}+4$
	$\frac{1}{2}\sqrt[3]{8}+4=$
	$\frac{1}{2}\cdot 2+4=$
	5
-2	$\frac{1}{2}\sqrt[3]{-2+1}+4$
	$\frac{1}{2}\sqrt[3]{-1}+4$
	$\frac{1}{2}\cdot -1+4$
	$-\frac{1}{2}+4=3\frac{1}{2}$

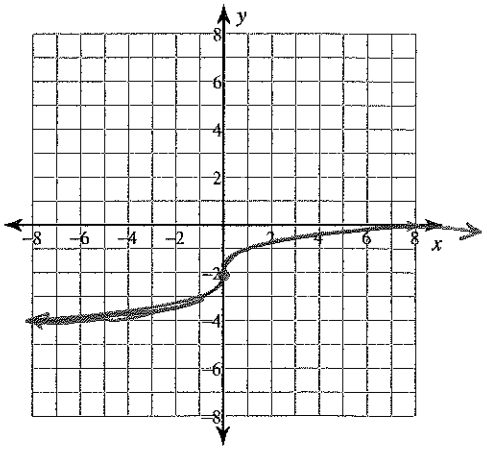
11) $y = \sqrt{x-4} - 2$

Vertex is $(4, -2)$



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

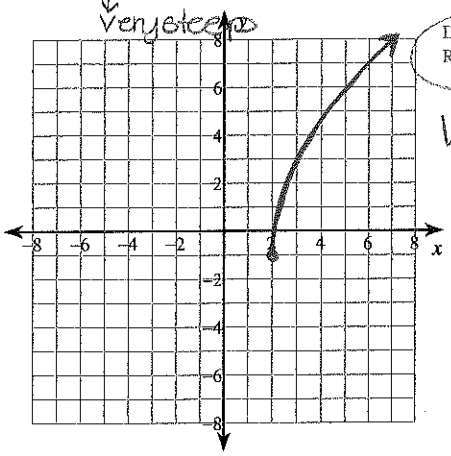
Vertex is $(0, -2)$



Identify the domain and range of each. Then sketch the graph.

13) $y = 4\sqrt{x-2} - 1$

very steep



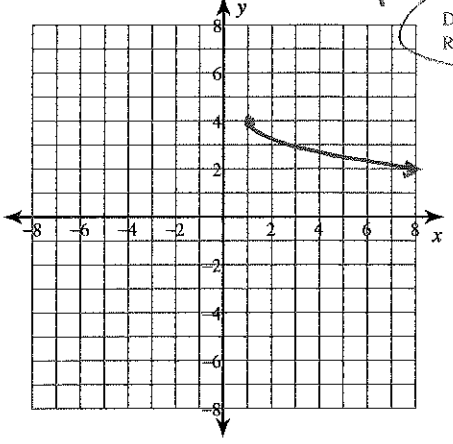
Domain: $x \geq 2$
Range: $y \geq -1$

Vertex is $(2, -1)$

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

negative

less steep



Domain: $x \geq 1$
Range: $y \leq 4$

Vertex is $(1, 4)$