

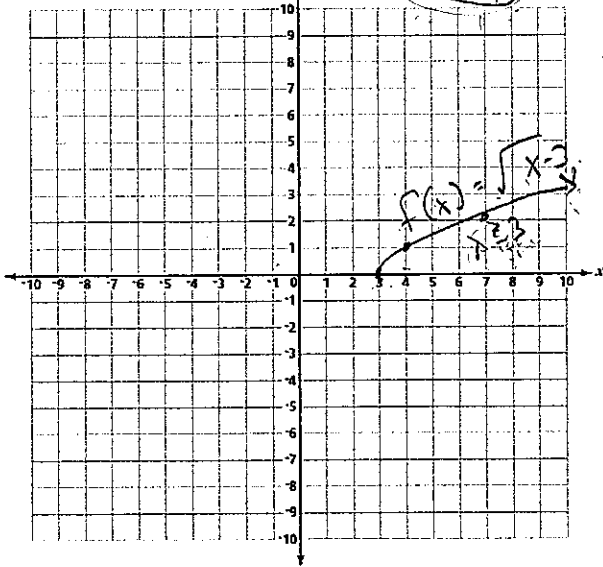
Name Key
8A: Algebra 1

Date _____
Period _____

Homework

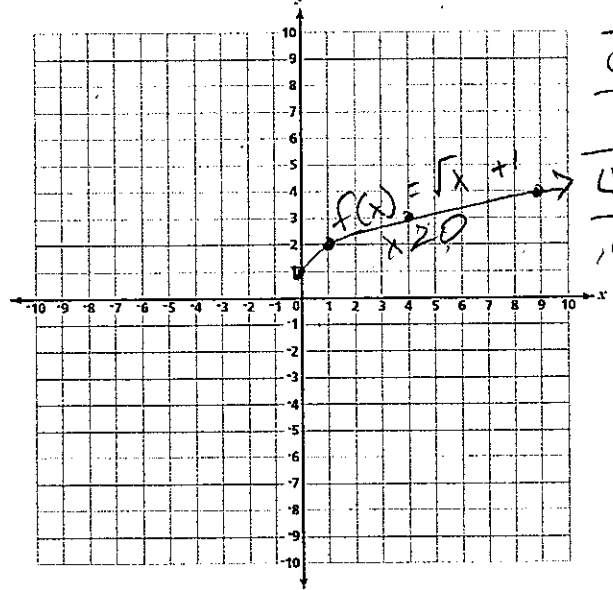
#'s 1-4: Graph the following square roots functions. Make sure you include your table of values.

1) $f(x) = \sqrt{x-3}$ Domain: $x-3 \geq 0$
 $\begin{matrix} +3 & +3 \\ \hline x \geq 3 \end{matrix}$
 Range: $y \geq 0$



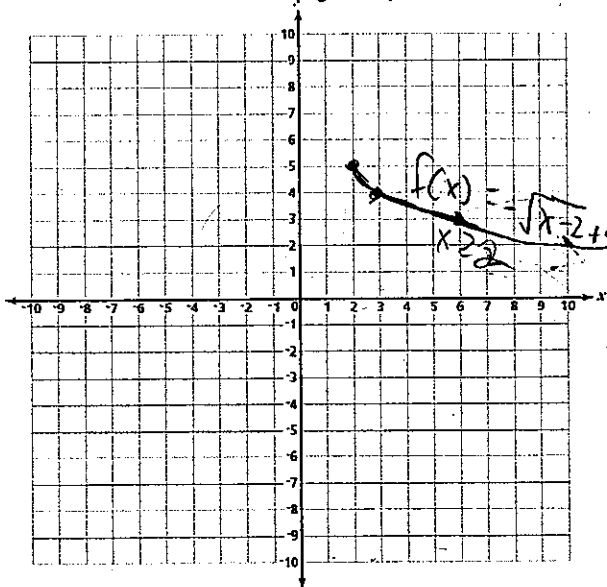
x	y
3	0
4	1
7	2

2) $f(x) = \sqrt{x} + 1$ Domain: $x \geq 0$
 Range: $y \geq 1$



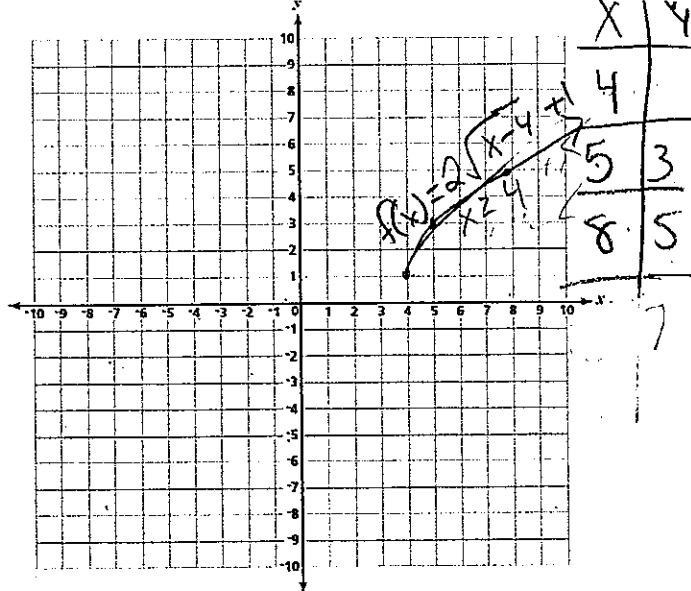
x	y
0	1
1	2
4	3
9	4

3) $f(x) = -\sqrt{x-2} + 5$ Domain: $x-2 \geq 0$
 $\begin{matrix} +2 & +2 \\ \hline x \geq 2 \end{matrix}$
 Range: $y \leq 5$



x	y
2	5
3	4
6	3

4) $f(x) = 2\sqrt{x-4} + 1$ Domain: $x-4 \geq 0$
 $\begin{matrix} +4 & +4 \\ \hline x \geq 4 \end{matrix}$
 Range: $y \geq 1$



x	y
4	1
5	3
6	5
8	7

#'s 5-8: Describe the transformation on each function, from the parent function $f(x) = \sqrt{x}$

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

- narrower (stretched vertically or horizontal compression) by a scale factor of 2
 - Translated 1 unit left & 2 units down

6) $g(x) = \sqrt{x-1}$

- translated 1 unit right

7) $h(x) = -\sqrt{x} + 5$

- reflected over the x-axis
 - translated 5 units up

8) $p(x) = -3\sqrt{x+3} + 5$

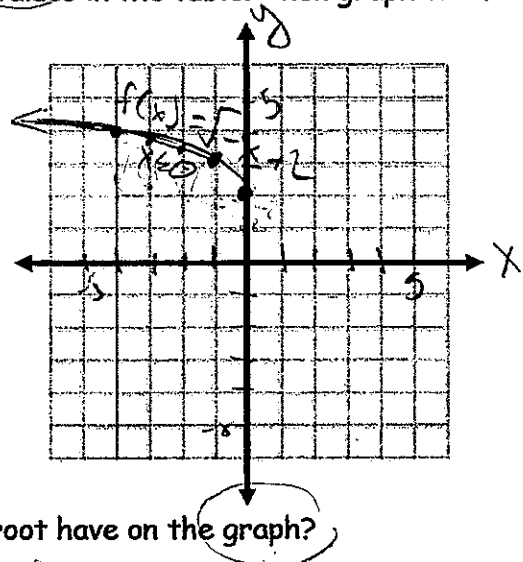
- reflected over the x-axis
 - narrower (stretched vert. or horiz. by a scale factor of 3) compression
 - translated 3 units left and 5 units up

9) Use the table below to find the values of $f(x)$ given the x -values in the table. Then graph the function.

$f(x) = \sqrt{-x} + 2$

x	f(x)
0	2
-1	3
-2	3.4142
-3	3.7321
-4	4

$-x \geq 0$
 $x \leq 0$



What effect does the negative on the inside of the square root have on the graph?

Reflect over the y-axis.

#10 & 11: Use the description to write the square root function $g(x)$.

10) The parent function $f(x) = \sqrt{x}$ is reflected across the y-axis, translated 3 units down, and 7 units left.

$g(x) = \sqrt{-(x+7)} - 3$
 $g(x) = \sqrt{-x-7} - 3$

$-x+7$
 $\sqrt{-2x}$
 $\sqrt{-x}$

11) The parent function $f(x) = \sqrt{x}$ is translated 2 units right, 5 units down and reflected across the x-axis.

$g(x) = -\sqrt{x-2} - 5$