2C.2 – HWK -Radical Characteristics **Name:** _____

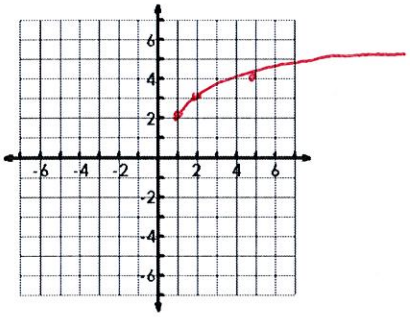
CCGPS Adv. Algebra **Date:** _____

Sketch the graph and fill in the chart for each of the following. Describe the transformation beside the graph.

1. $f(x) = \sqrt{x-1}+2$

Starting Pt: (1,2)	Inc or Dec: (1, ∞)
Domain: [1, ∞)	Range: [2, ∞)
Abs. Max or Abs Min:	(1,2)

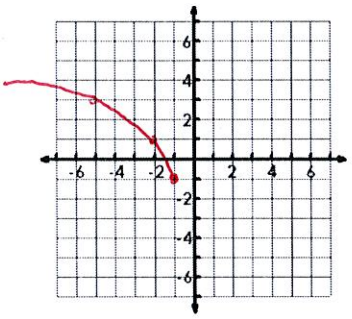
End Behavior:
$x \to 1$, $f(x) \to 2$ $x \to \infty$, $f(x) \to \infty$



2. $f(x) = 2\sqrt{-(x+1)}-1$

Starting Pt: (-1,-1)	Inc or Dec:
Domain: (-∞, -1]	Range: [-1, ∞)
Abs. Max or Abs Min:	(-1,-1)

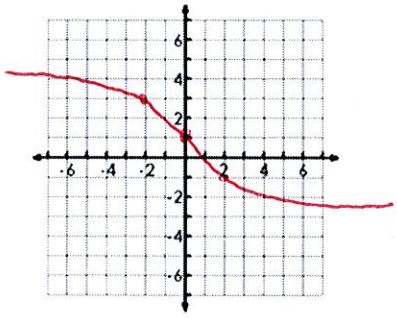
End Behavior:
$x \to -\infty$, $f(x) \to \infty$ $x \to -1$, $f(x) \to -1$



3. $f(x) = -2\sqrt[3]{\frac{1}{2}x}+1$

Starting Pt: (0,1)	Inc or Dec: (-∞, ∞)
Domain: ℝ	Range: ℝ
Abs. Max or Abs Min:	None

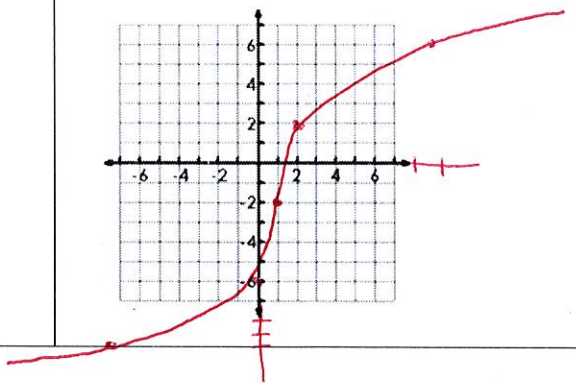
End Behavior:
$x \to -\infty$, $f(x) \to \infty$ $x \to \infty$, $f(x) \to -\infty$



4. $f(x) = -4\sqrt[3]{-(x-1)}-2$

Starting Pt: (1,-2)	Inc or Dec: (-∞, ∞)
Domain: ℝ	Range: ℝ
Abs. Max or Abs Min:	None

End Behavior:
$x \to -\infty$, $f(x) \to -\infty$ $x \to \infty$, $f(x) \to \infty$



Write the equation of the radical with the given transformations.

5. Compressed vertically by 1/4 , reflected over the y-axis, right 15, and up 12.

$f(x) = \frac{1}{4}\sqrt{-(x-15)} + 12$

6. Compressed horizontally by ½ , reflected over the x-axis, left 9, and down 7.

$f(x) = -\sqrt{2(x+9)} - 7$

Solve each equation

7. $\sqrt{2x-5}+11=36$

$X=315$

8. $3(4x+1)^{1/2}=27$

$X=20$

9. $\sqrt[3]{3x-13}=\sqrt[3]{x-21}$

$X=-4$

10. $\sqrt{2x+5}=x-5$

$X=10$

11. $\sqrt{2x+15}=x$

$X=5$

12. $3(x-2)^{1/3}=-9$

$X=-25$

13. $\sqrt{2x-5}-\sqrt{4x-9}=0$

No Solution

14. $\sqrt{-6x+30}=x-5$

$X=5$

15. $5(x+5)^{1/3}=-15$

$X=-32$

16. $\sqrt{2x+6}=\sqrt{3x+1}$

$X=5$