Unit 5 Exam Review: Complete the example problems. Study for the exam set for this Friday! NAME_____

1) Simplify:
$\sqrt[3]{-8x^3y^5z^7}$

2) Simplify:
$7\sqrt[5]{b^5n} - 2b\sqrt[10]{n^2}$

3) Simplify:
$\frac{2}{1-\sqrt{2}}$

4) Simplify:
$2\sqrt{72} - 3\sqrt{2}$

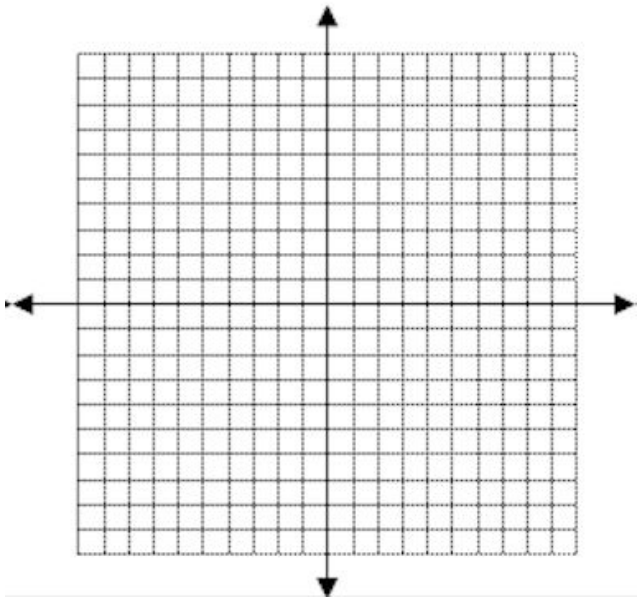
5) Solve the equation. Consider the radicand...
$6\sqrt{x-2} + 4 \leq 28$

6) Solve the equation: Check your solutions...
$\sqrt{2x+7} = x - 4$

7) Find the inverse of the function.
$f(x) = \sqrt{x-4} + 2$

8) Solve the equation: Check your solutions… [Hint: square both sides and FOIL the left side]
$\sqrt{x+6} + 1 = \sqrt{7-x}$

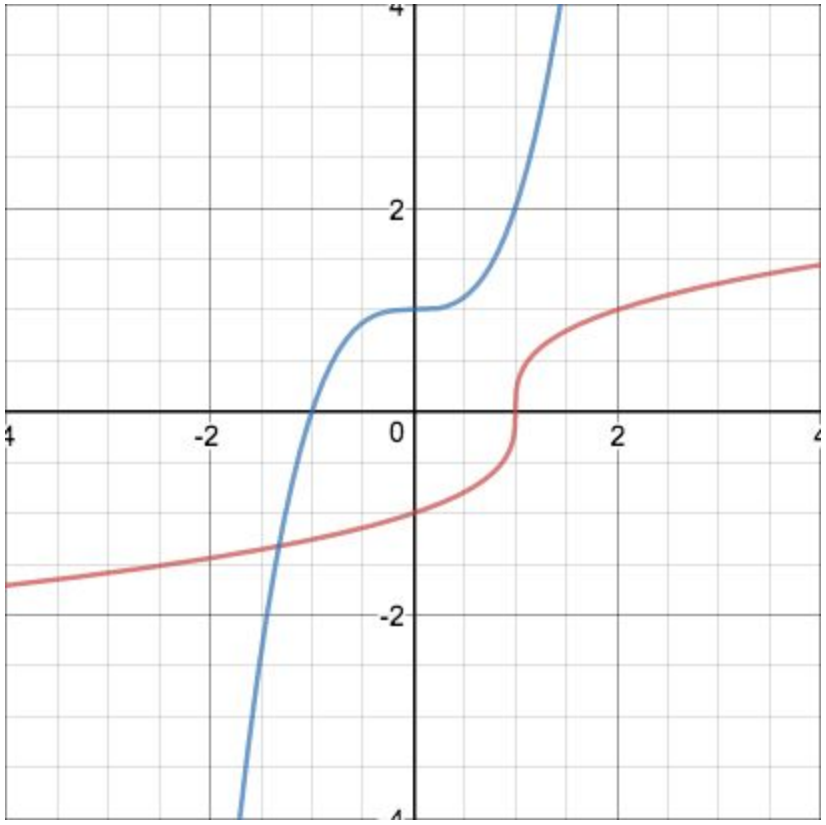
9) Graph the function and its inverse: $f(x) = \sqrt[3]{x-1}$



10) The average speed that a tsunami (a large tidal wave) travels is represented by the function $s = (200d)^{1/2}$, where s is the speed (in miles per hour) that the tsunami is traveling and d is the average depth (in feet) of the wave.

a. Find the inverse of the function.

b. Find the average depth of the tsunami when the recorded speed of the wave is 250 miles per hour. [Hint: use the inverse function you just created]

1) $-2xyz^2\sqrt[3]{y^2z}$	2) $5bn^{1/5}$ or $5b\sqrt[5]{n}$	3) $-2-2\sqrt{2}$	4) $9\sqrt{2}$
5) $2 \le x \le 18$	6) $x = 9$ *is the only solution* $x = 1$ *is extraneous*	7) $(x-2)^2+4$ or x^2-4x+8	8) $x = -2$ *is the only solution* $x = 3$ *is the extraneous*
9)  	10) a) $d = \frac{s^2}{200}$ b) $312.5\,ft$		