QUIZ REVIEW	How do we review for our quiz?
HW #	
Do Now	Objective: I can simplify radicals. #7, # 9, # 11 (Extra Handout)

$2^{1/3} \cdot x^{4/3}$

$3\sqrt{2x^4} = (2x)^{1/3}$

$3\sqrt{2} \cdot 3\sqrt{x^4}$

STOP

Objective 1: I can convert write radicals as rational exponents and vice versa. $2^{1/3} \cdot x^{4/3}$

Write each expression using rational exponents.

1. $\sqrt[2]{x}$ $x^{\frac{1}{2}}$
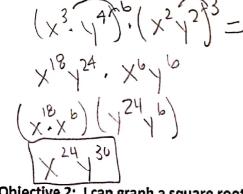
2. $\sqrt[3]{2x}$ $(2x)^{1/3}$ $2^{1/3} x^{1/3}$

3. $\sqrt[4]{a^2}$ $a^{\frac{2}{4}}$

4. $5\sqrt[2]{x^3}$ $5 \cdot x^{3/2}$

5. $\sqrt[5]{(3x)^2}$ $(3x)^{2/5}$

Write each expression using radical notation.

6. $x^{\frac{2}{3}}$

7. $(3x)^{\frac{1}{2}}$ $\sqrt{3x}$

8. $3x^{\frac{1}{2}}$ $3 \cdot \sqrt[2]{x}$ $3 \cdot x^{1/2}$

9. $x^{\frac{3}{2}}$ $3\sqrt[2]{x} = 3\sqrt{x}$

10. $(5x)^{\frac{4}{7}}$

$(x^3 \cdot y^4)^6 \cdot (x^2 y^2)^3 =$

$x^{18} y^{24} \cdot x^6 y^6$

$(x^{18} \cdot x^6)(y^{24} y^6)$

$x^{24} y^{30}$

$\dfrac{x^0 \cdot x^3 \cdot y^1}{y^5} = x^3 \cdot y^{-4} = \dfrac{x^8}{y^4}$

$z^{-6} = \dfrac{1}{z^6}$

1-5

Objective 2: I can graph a square root function using transformations of the parent function $y = \sqrt{x}$

Objective 3: I can state the domain and range of a square root function.

The function $f(x) = \sqrt{64x}$ approximates an objects downward velocity in feet per second as the object hits the ground after bouncing x feet in height.

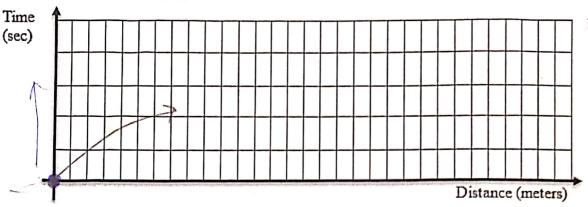a) Find the velocity of a ball that bounces 8.5 feet.

$f(x) = \sqrt{64 \cdot 8.5}$
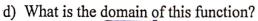
$= 23.32 ft$

b) Find the height of a ball whose velocity is 12 ft/sec.

$12^2 = \sqrt{64x}$

$\dfrac{144}{64} = \dfrac{64x}{64}$

$x = 2.25 ft.$

$\sqrt[3]{-108 x^4 y^5 z^6}$

$108^{1/3} x^{4/3} y^{5/3} z^{6/3}$

$= \sqrt{9}$

$\sqrt{x^2} \sqrt{9}$

$x = \pm 3$

c) Create a graph and table for this situation. $y = \sqrt{-5}$

Time (sec)

Distance (meters)

d) What is the domain of this function?

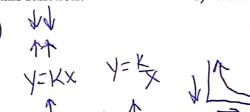$[0, \infty)$

$y = kx$ $y = \frac{k}{x}$

e) What is the range of this function?

$[0, \infty)$

Objective 5: I can identify a direct and inverse variation function. (Graph and Equation)

Classify the following as a Direct Variation or Inverse Variation function.

a. $V = \dfrac{k}{t^2}$

b. $R = klwh$

c. $G = \dfrac{kp_1p_2}{d}$

d. $G = kt^2$

a) __I__   b) __D__   c) __I__   d) __D__

Is the relationship between the values in each situation a *direct variation* or an *inverse variation* function?

a. The stretch of a bungee cord (in feet) is a function of the jumper's weight (in pounds).

Direct variation

b. A group of classmates go on a 200 mile road trip to the North Carolina coast. The time it will take for the classmates to reach the coast is a function of the speed they are driving.

Inverse Variation