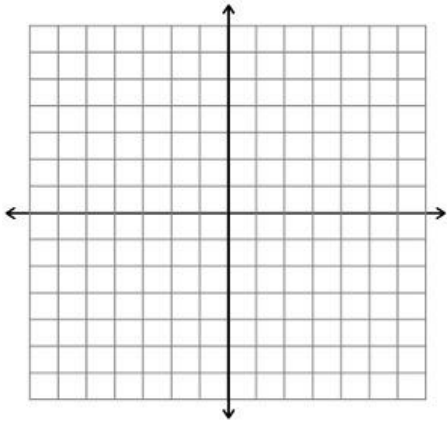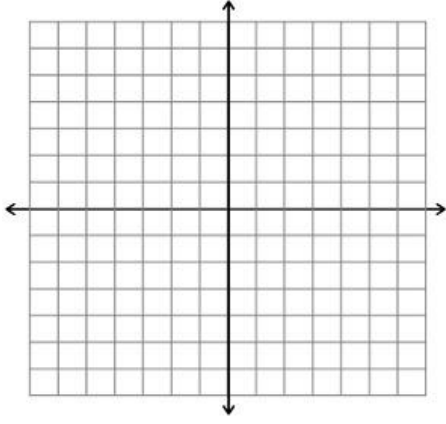Math 2

Unit 3 Quiz Review

Name: _____

Rewrite the following using radical notation and simplify if possible:

1)	$41^{\frac{5}{8}}$	2)	$49^{\frac{1}{2}}$	3)	$4^{\frac{3}{2}}$
4)	$32^{\frac{1}{4}}$	5)	$x^{\frac{3}{5}}$	6)	$(-64)^{\frac{2}{3}}$

Rewrite the following using rational exponent notation:

7)	$\sqrt{19}$	8)	$(\sqrt[4]{8})^3$	9)	$(\sqrt[3]{-18})^5$

Graph the following square root functions and then state the domain and range of each:

10)	$y = \sqrt{x-1} - 3$	11)	$y = -3\sqrt{x} + 3$

Domain: _____

Range: _____

Domain: _____

Range: _____

Solve the following radical / rational exponent equations and check for extraneous solutions:

12) $\sqrt{x+3}+1=8$	13) $\sqrt{12-x}=x$	14) $4+\sqrt[3]{3x-3}=1$
15) $\sqrt{4x+1}=\sqrt{x+7}$	16) $\sqrt{x+9}=\sqrt{2x-1}$	17) $(x+1)^{\frac{4}{3}}-7=9$

Solve the following applications:

18)	Pilots use the function D(A) = $3.56\sqrt{A}$ to approximate the distance D in kilometers to the horizon from the altitude A in meters. What is the approximate distance to the horizon observed by a pilot flying at an altitude of 8,000 m?
19)	The formula for the velocity of an object dropped at a specific height can be represented by the equation: $V=\sqrt{2gh}$ where V is the velocity in meters per second, g is the acceleration due to gravity and h is the height in meters at which the object was dropped. If an object has a velocity of 50 meters per second when it hits the ground and the acceleration due to gravity is $10\ m/s^2$ then what is the height at which the object was dropped?
20)	The function $d=\sqrt{2h}$ can be used to estimate the distance (in miles) to the horizon d from a given height (in feet) h. At what height would you be if you spotted a boat and the horizon that was 10 miles away?