Math-2 Name_____ ID: 1

SM2 HW #9-3 (Exponential Function)

Date_____ Period____

1) a) Write the vertex form equation. (Show all of your work.)
b) Find the zeroes of the equation.

$y = x^2 - 6x + 11$

Simplify.

2) $3\sqrt{24} + 2\sqrt{6}$

3) $y = 5x^2 + 3x - 8$

a) Convert to intercept form.

b) Find the zeroes.

4) $-3\sqrt{5} + 2\sqrt{45}$

5) Perform the indicated operation;
$g(a) = 3a + 5$
$f(a) = 2a + 3$
Find $(g \circ f)(-7)$

6) Rewrite in exponential form.
$\left(\sqrt[3]{3x^2}\right)^4$

7) Rewrite in radical form.
$(6x)^{\frac{4}{3}}$

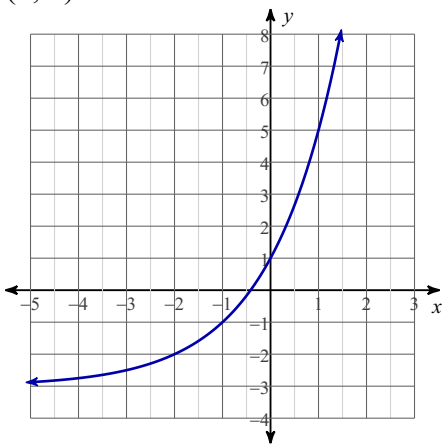
8) Simplify. Your answers should not have any negative exponents.
$3xy^{-3} \cdot 4x^{\frac{3}{2}}$

9) Simplify
$\left(m^2 n^{\frac{3}{4}}\right)^{\frac{3}{2}}$

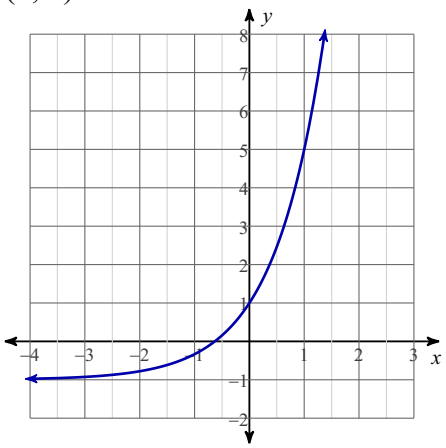
10) Simplify
$\sqrt{15}\left(3 - \sqrt{6}\right)$

11) $\sqrt{96x^2y^4}$

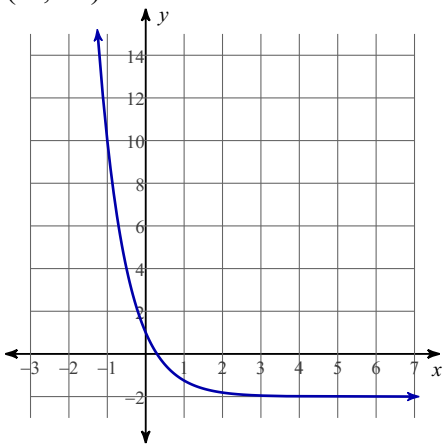
12) Write the eqaution for the graph. The graph passes through the ordered pairs (0, 1) and (1, 5)



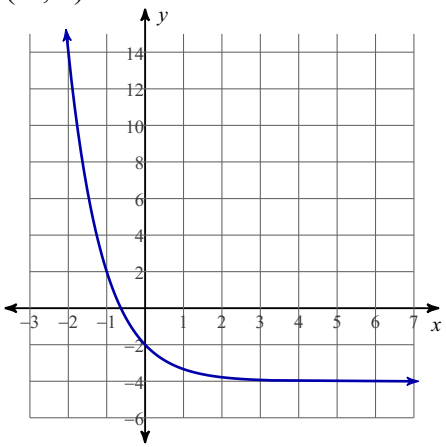
13) Write the eqaution for the graph. The graph passes through the ordered pairs (0, 1) and (1, 5)



14) Write the eqaution for the graph. The graph passes through the ordered pairs (0, 1) and (-1, 10)



15) Write the eqaution for the graph. The graph passes through the ordered pairs (0, -2) and (-1, 2)



16) An arrow is shot up from the top of 30 story building (300 feet tall) with an initial upward velocity of 410 feet per sec. The modeling equation is $h(t) = -16t^2 + 410t + 300$

a) What is the maximum height the arrow will reach?
b) When will it reach that height?
c) When will it hit the ground at the bottom of the cliff?

Simplify.

17) $\dfrac{5\sqrt{15}}{4\sqrt{27}}$