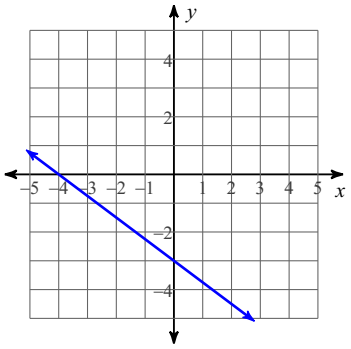
Math-3 Name_____ ID: 1

SM3 HW #1-8 (Unit 1 Test Preview HW)

Date_____ Period____

Write the slope-intercept form of the equation of each line.

1)



Write the slope-intercept form of the equation of the line through the given points.

2) through: $(3, -5)$ and $(4, -1)$

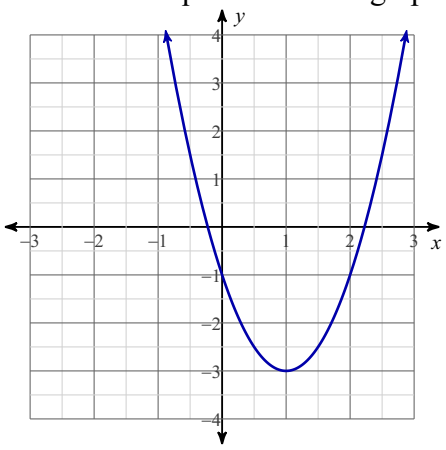
3) Compare the following equation to the parent function for quadratics $y = x^2$.
a) Give the location of the vertex (x,y).
b) Identify the transformations that have been applied to the parent function.

$y = 3x^2 + 2$

4) Compare the following equation to the parent function for quadratics $y = x^2$.
a) Give the location of the vertex (x,y).
b) Identify the transformations that have been applied to the parent function.

$y = -3(x - 2)^2 + 1$

5) What is the equation for the graph?



6) a) What is the domain?
b) What is the range?
c) What is the "endpoint"?

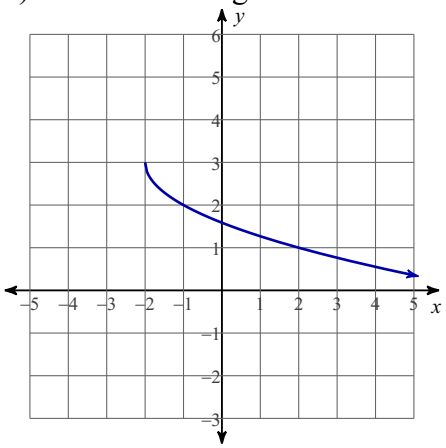
$y = -4 + 2\sqrt{x - 3}$

7) What is the vertex?
$y = 4|x - 3| + 5$

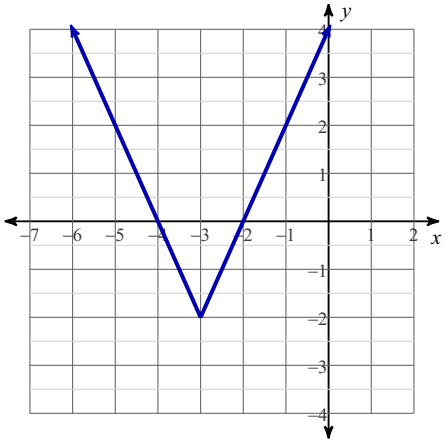
8) Describe the transformation of the absolute value parent function.
$y = -3|x - 5| - 7$

9) a) Explain what transformations have been applied to the parent function.
(b) Where is the inflection point?
$y = -2 - 3\sqrt[3]{x - 4}$

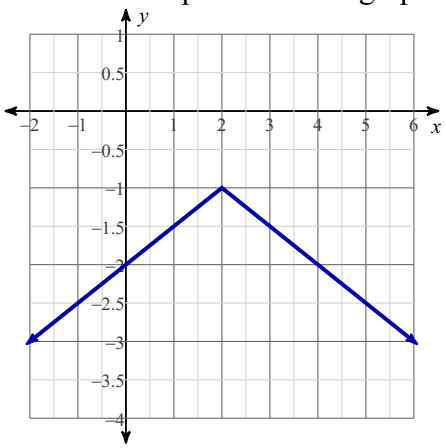
10) a) What is the equation of the graph?
b) What is the domain?
c) What is the range?



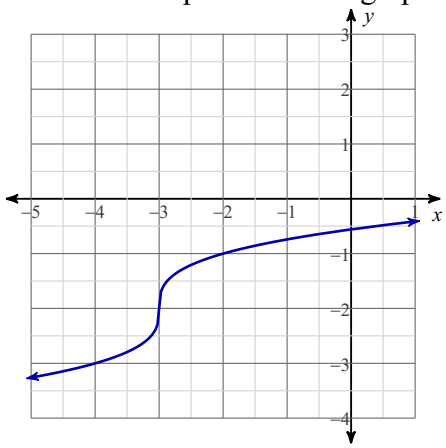
11) What is the equation of the graph?



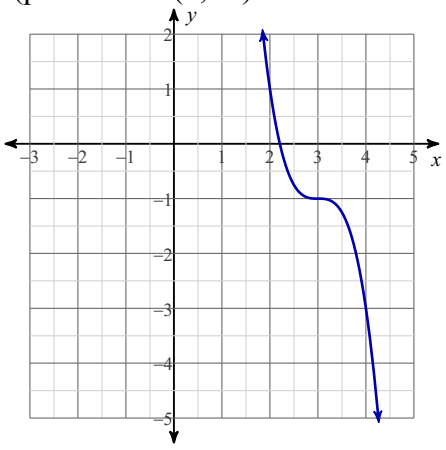
12) What is the equation of the graph?



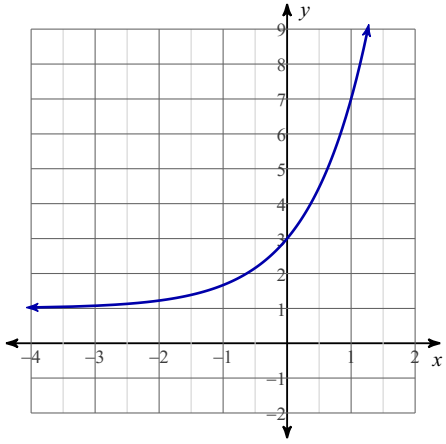
13) What is the equation of the graph?



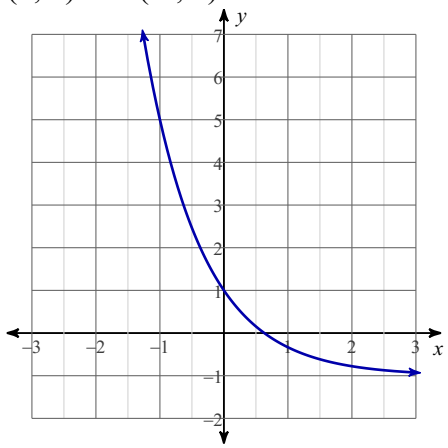
14) What is the equation of the graph?
(passes thru (4, -3)



15) Write the eqaution for the graph. The graph passes through the ordered pairs (0, 3) and (1, 7). SHOW ALL STEPS you used to obtain the equation.



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



17) a) Describe the transformation of the parent function $y = \left(\frac{1}{2}\right)^x$ given by the equaiton

$g(x) = 3 \cdot \left(\frac{1}{2}\right)^x + 2$

b) what is the horizontal asymptote?

c) what is the domain?

d) what is the range?

e) What is the "growth factor"?

f) what is the y-intercept?

g) is the function "growth" or "decay"?

18) The equation that models the cooldown of a cup of hot chocolate (temperature in F, and time in minutes) is given by:

$T(t) = 115(0.92^t) + 70$

a) What is the initial temperature of the hot chocolate?

b) What is the room temperature?

c) What will be the temperature in 6 minutes?

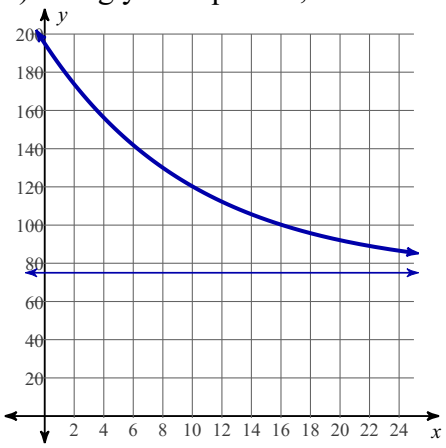
d) When will the temperature be 90 F ?

19) A hot bowl of soup (at 195 F) is placed on the counter in a room that is at 75 F. In 9 minutes the soup has cooled to 125 F.

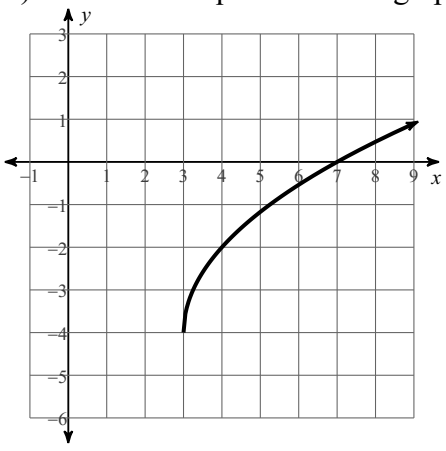
a) Draw and corrfectly label the graph that models the cooldown of the soup.

b) Using the 3-step method we have learned, find the equation that models this situation. (Write your "base" rounded to 3 decimal places.)

c) Using your equation, what will the temperature be 10 minutes after starting to cool?



20) a) Where is the function increasing?
b) Where is the function decreasing?
c) Where is the function positive?
d) Is the function even, odd, or neither?
e) Where are the extrema and what type are they?
f) How is it related to its parent function?
g) What is the end behavior? (use "infinity notation")
h) What is the domain?
i) What is the range?
j) What is the average rate of change between x = 4 and x = 7?
k) What is the equation of the graph?



21) a) Where is the function increasing?
b) Where is the function decreasing?
c) Where is the function positive?
d) Is the function even, odd, or neither?
e) Where are the extrema and what type are they?
f) How is it related to its parent function?
g) What is the end behavior? (use "infinity notation")
h) What is the domain?
i) What is the range?
j) What is the average rate of change between x = 1 and x = 2?
k) What is the equation of the graph?