Week 26 March 4-8 Algebra

Monday

Solve $R = \frac{D-T}{3}$ for the variable *D*.

Solve $A = B + \frac{C}{D}$ for *C*.

Solve the system by the elimination method.

$$7x + 5y = -25$$
$$5x + 3y = -23$$

Determine the average rate of change over the interval -2 ≤ *x* ≤ 3 for the following functions.

y = 5x – 1

$y = x^2 - 3x$

Simplify the expressions:

a. $\left(\frac{1}{3}\right)^{-4}$

b. $(2)^{-5}$

c. $\left(\frac{6}{5}\right)^{-2}$

d. x^{-3}

Evaluate for the given value

$y = -3(2)^x;\ x = 2$

$g(x) = 2\left(\frac{1}{2}\right)^x;\ x = -2$

$f(x) = 8(0.25)^x;\ x = 5$

Tuesday

Complete the table of values.

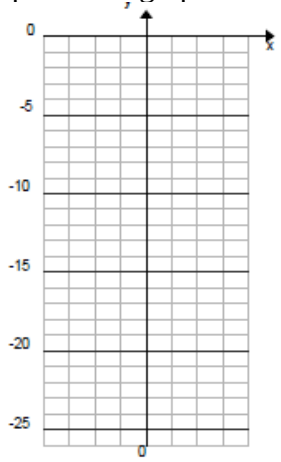
$f(x) = 2(3)^x$

x	y
-2	
-1	
0	
1	
2	

Complete the table, then graph on the graph below.

$f(x) = -\frac{1}{4}(4)^x$

x	y
-1	
0	
1	
2	
3	



Determine the average rate of change from:

Day 1 to Day 4:_____

Day 0 to day 6:_____

Days (x)	Amount of bacteria (f(x))
0	12
1	19
2	30
3	48
4	76
5	121
6	192

Describe the graph shifts of the following.

a. $y = -3^{x-4} + 7$; from $y = 3^x$

b. $f(x) = \frac{1}{2}(x+7)^3 - 9$

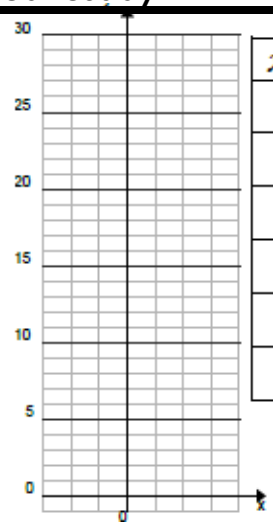
$(from\ the\ parent\ function\ f(x) = x^3)$

Week 26 March 4-8 Algebra

Wednesday

1. Graph:

$$y = \frac{2}{3} \cdot 3^x$$



x	y

2. On the graph above, state the following:
   a. Domain
   b. Range
   c. End behavior

$x \to -\infty, y \to$ ___
$x \to +\infty, y \to$ ___

3. For the function above, ***write a new function*** that will translate the graph 3 units to the right and 4 units down.

4. Using the function you wrote for problem 3, state the domain and range.
Domain: Range:

Write the equation for the horizontal asymptote.

5. Write an exponential function that has a horizontal Asymptote of 5, from the original function $y = x^2$.

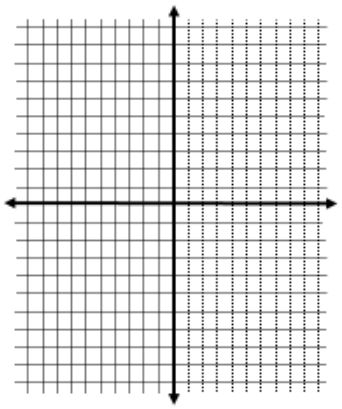
$$y = 2\left(\frac{1}{2}\right)^x - 4$$

Y-Intercept:

Asymptote:

Range:

Domain:



Thursday

Given a table of values for the exponential function $f(x)$ and a description of the transformations for the function g(x), fill out the table of values based on the origina points for $g(x)$, the transformed function.

a.

x	−1	0	1	2	3
f(x)	½	1	3	9	27

Translated Down 4

x	−1	0	1	2	3
g(x)					

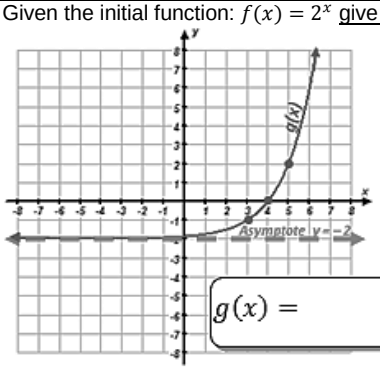
b.

x	−1	0	1	2	3
f(x)	½	1	2	4	8

Translated Left 1 & Up 2

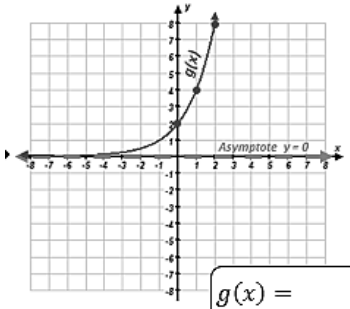
x					
g(x)					

Given the initial function: $f(x) = 2^x$ give an equation for g(x) based on f(x).



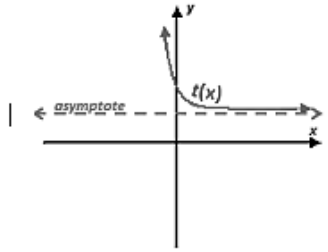
$g(x) =$

Given the initial function: $f(x) = 2^x$ give an equation for g(x) based on f(x).



$g(x) =$

Consider $t(x)$ is of the form $t(x) = b^x + c$.



Which of the following must be true for the parameter 'b'?

$b > 1$ $0 < b < 1$ $b < 0$

Which of the following must be true for the parameter 'c'?

$c > 0$ $c = 0$ $c < 0$