

WS: T3-52 Exponential Transformations

Show your work!

Evaluate.

1. $f(x) = 4^x$, given $x = -3$

2. $g(x) = 2^x$, given $x = -4$ 3. $h(x) = 5^x$, given $x = -2$

4. $g(x) = 2^x$, given $x = -1$

5. $f(t) = 2^t$, given $t = -5$

3. $h(t) = 5^t$, given $t = -4$

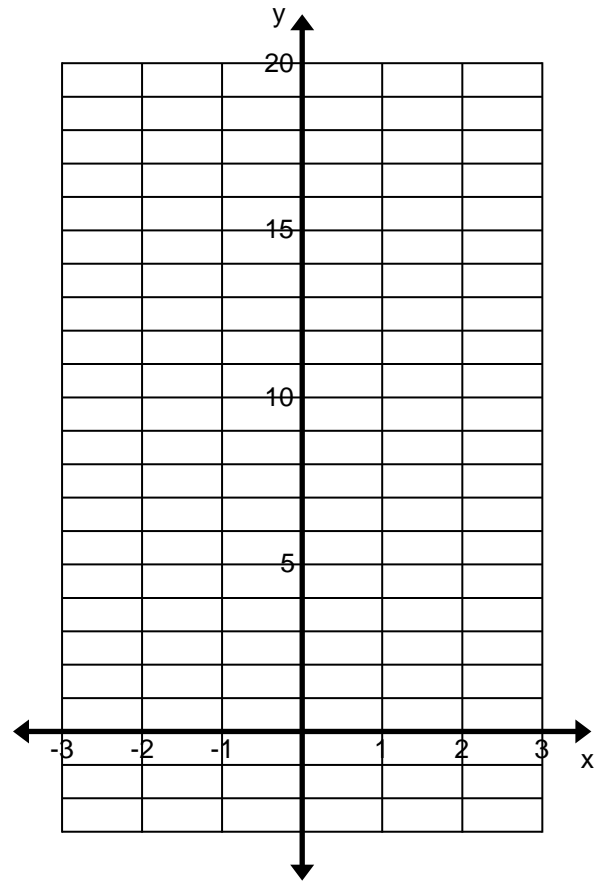
7. Graph the following functions on the same coordinate plane, use 4 different colors. State the domain and range for each function.

$f(x) = 3x + 2$	
x	$f(x)$
-1	
0	
1	
2	
D:	R:

$f(x) = 2 \cdot 3^x$	
x	$f(x)$
-1	
0	
1	
2	
D:	R:

$f(x) = 3^x + 2$	
x	$f(x)$
-1	
0	
1	
2	
D:	R:

$f(x) = 2 \cdot 3^x + 2$	
x	$f(x)$
-1	
0	
1	
2	
D:	R:



8. Describe the transformations used to obtain the graph of $g(x)$ from the graph of $f(x) = 4^x$. State the domain and range for each transformation.

a) $g(x) = -2 \cdot 4^x$ D: R:

b) $g(x) = 4^x + 2$ D: R:

c) $g(x) = 3 \cdot 4^x - 8$ D: R:

9. Evaluate.

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

$$g(x) = 4x$$

$$h(x) = 5^x$$

a) $-2[f(3)]$ b) $g(x) - 3$

c) $h(2) + 4$ d) $g\left(\frac{1}{2}\right) + 10$

e) $f(-5)$ f) $3[h(4)]$

10. Write the equation of the following function and answer the question.

You are planning on saving money for college. You currently have a total of \$1,500 saved up. You plan on investing \$500 in your 529 College saving plan that make an 8% return on your investment. How much money will you have saved up after 4 years? How much money will you have after 4 years if you invest the entire \$1,500?

- a) only invest \$500 for 4 years? b) invest entire \$1,500 for 4 years?