

**SelfCheck #15 – Linear & Exp Functions**

Linear Formulas:  $m = \frac{\text{rise}}{\text{run}} = \frac{y - y_1}{x - x_1}$

$y - y_1 = m(x - x_1)$

$f(x) = mx + b$

Exponential Formulas:  $f(x) = a \cdot b^x$

$f(t) = P(1+r)^t$

$f(t) = P(1-r)^t$

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

b)  $g(x) = -3x + 3$

c)  $h(x) = 2(3)^x$

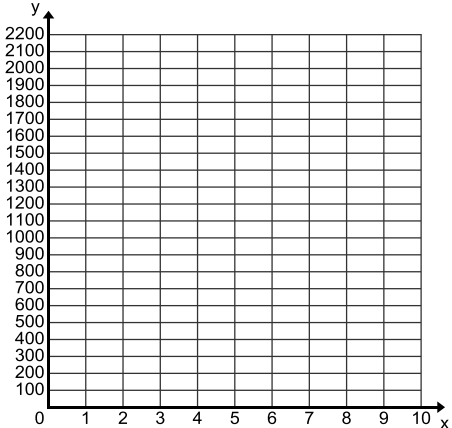
Evaluate, using the functions from above.

1)  $4[f(-3)]$

2)  $h(2) + 10$

3)  $\frac{g(4)}{3}$

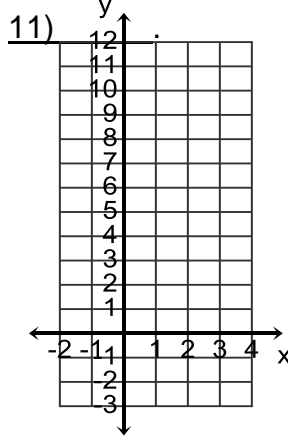
4 - 8. Fill in the table and answer the questions.

<p><b>Context</b> Chris is saving money to go to Disneyland. He is making 10% per year. He currently has \$1,600 in his savings account.</p>	<p><b>4) Table</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td> </td><td> </td></tr> <tr><td>0</td><td> </td></tr> <tr><td>1</td><td> </td></tr> <tr><td>2</td><td> </td></tr> <tr><td>3</td><td> </td></tr> <tr><td>4</td><td> </td></tr> <tr><td>5</td><td> </td></tr> </table>			0		1		2		3		4		5		<p><b>5) Questions</b></p> <p>a) discrete or continuous</p> <p>b) domain</p> <p>c) range</p>
0																
1																
2																
3																
4																
5																
<p><b>6) Graph</b></p> 	<p><b>7) _____</b> <b>Starting Point (a):</b></p> <p><b>Factor of Change (b):</b></p> <p><b>Equation :</b></p>	<p><b>8) _____</b> d) What is the value at <math>f(9)</math>?</p> <p>e) What does your answer in part d mean?</p>														

10 - 14. Fill in the function table and plot the points on the graph. Then graph the other tables on the same graph, using different colors. Fill in the information about the graphs.

10) \_\_\_\_\_.

x	$f(x) = 2^x$	$f(x)$	$(x, f(x))$
-1			
0			
1			
2			
3			



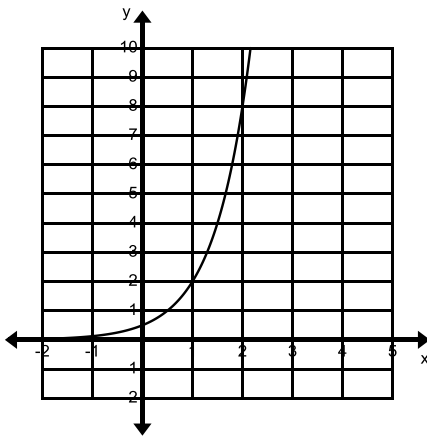
$g(x) = 2^x + 2$	
-1	$2\frac{1}{2}$
0	3
1	4
2	6
3	4

$h(x) = 2^x - 1$	
-1	$-\frac{1}{2}$
0	0
1	1
2	3
3	7

Function	Asymptote	Domain & Range	Transformation
12) $f(x) = 2^x$		D: R:	none
13) $g(x) = 2^x + 2$		D: R:	
14) $h(x) = 2^x - 1$		D: R:	

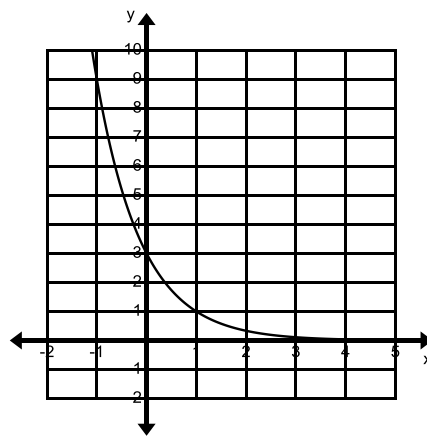
Fill in the table given the information in the graph and then determine the Exponential Equation,  $f(x) = a \cdot b^x$ .

15)



$f(x) =$


16)



$f(x) =$
