Name:

Date:

EOC Practice Problems





2. Which scatter plot BEST represents a model of exponential growth?





-4 0

х

8 12

4

3. Which table represents an exponential function?

	x	0	1	2	3	4		x	0	1	2	3	4
Δ	у	5	6	7	8	9	C	у	5	13	21	29	37
/ \.							C.						
	x	0	1	2	3	4		x	0	1	2	3	4
	v	22	44	66	88	110		v	3	9	27	81	243
							_	,	<u> </u>		21	01	2.0

4. A table of values is shown for f(x) and g(x). Which statement compares the graphs of f(x) and g(x) over the interval [0, 5]?

x	f(x)
0	0
1	1
2	4
3	9
4	16
5	25

x	g(x)
0	2
1	-1
2	1
3	5
4	13
5	29

- A. The graph of f(x) always exceeds the graph of g(x) over the interval [0, 5].
- B. The graph of g(x) always exceeds the graph of f(x) over the interval [0, 5].
- C. The graph of g(x) exceeds the graph of f(x) over the interval [0, 4], the graphs intersect at a point between 4 and 5, and then the graph of f(x) exceeds the graph of g(x).
- D. The graph of f(x) exceeds the graph of g(x) over the interval [0, 4], the graphs intersect at a point between 4 and 5, and then the graph of g(x) exceeds the graph of f(x).
- 5. Which statement is true about the graphs of exponential functions?
 - A. The graphs of exponential functions never exceed the graphs of linear and quadratic functions.
 - B. The graphs of exponential functions always exceed the graphs of linear and quadratic functions.
 - C. The graphs of exponential functions eventually exceed the graphs of linear and quadratic functions.
 - D. The graphs of exponential functions eventually exceed the graphs of linear functions but not quadratic functions.
- 6. Which statement BEST describes the comparison of the function values for f(x) and g(x)?
 - A. The values of f(x) will always exceed the values of g(x)
 - B. The values of g(x) will always exceed the values of f(x)
 - C. The values of f(x) exceed the values of g(x) over the interval [0, 5].
 - D. The values of g(x) begin to exceed the values of f(x) within the interval [4, 5].

GSE Algebra I

- 7. If the parent functions is f(x) = mx + b, what is the value of the parameter m for the line passing through the points (-2, 7) and (4, 3)?
 - A. -9 B. -3/2 C. -2 D. -2/3
- 8. Consider this function for cell duplication. The cells duplicate every minute. Describe the parameters of this function.

 $f(x) = 75(2)^{x}$

- A. The 75 is the initial number of cells, and the 2 indicates that the number of cells doubles every minute.
- B. The 75 is the initial number of cells, and the 2 indicates that the number of cells increases by 2 every minute.
- C. The 75 is the number of cells at 1 minute, and the 2 indicates that the number of cells doubles every minute.
- D. The 75 is the number of cells at 1 minute, and the 2 indicates that the number of cells increases by 2 every minute.

9. What is the y-intercept of	f the graph of $h(x) =$	2×-4?				
A. (0, -4)	B. (0, -3)	C. (0, 1)	C. (0, 1)		D. (0, 2)	
10. What is the range of the	graph of f(x) = -3(x –	4)?				
A. (-3, 4)	B. (-3,∞)	C. (-∞, 4)	C. (-∞, 4)		D. (-∞, ∞)	
11. Which function is modele	ed in this table?			,		
$\Delta f(\mathbf{x}) = \mathbf{x} + 7$	$A = f(x) = x \pm 7$			<i>f</i> (<i>x</i>)		
(x) = x + y		1	8			
B. $f(x) = 5x + 8$	2	40				
C. $f(x) = (8)^{x}$			3	200		
D. $f(x) = 8/5(5)^{x}$			4	1,000		
				,		

12. If f(12) = 4(12) - 20, which function gives f(x)?

A. $f(x) = 4x^2 - 20$ B. $f(x) = 4^x - 20$ C. f(x) = 4x - 20D. $f(x) = 4x^2 + 12x - 20$

13. Which function has a range of $f(x) \leq \frac{3}{4}$?

A. $f(x) = \frac{3}{4}x + 5$ B. $f(x) = -x^2 + \frac{3}{4}$ C. $f(x) = x^2 - \frac{3}{4}$ D. $f(x) = \frac{3}{4} - 5x$

EOC Review

14. A sample of 1000 bacteria becomes infected with a virus. Each day, one-fourth of the bacteria sample dies due to the virus. A biologist studying the bacteria models the population of the bacteria with the function P(t) = 1000(0.75)⁺, where t is the time, in days.

What is the range of this function in this context?

- A. Any real number such that $t \ge 0$
- B. Any whole number such that $t \ge 0$
- C. Any real number such that $0 \le P(t) \le 1000$
- D. Any whole number such that $0 \le P(t) \le 1000$
- 15. The graph shows the height, y, in meters, of a rocket above sea level in terms of the time, t, in seconds, since it was launched. The rocket landed at sea level.

What does the x-intercept represent in this situation?

- A. The height from which the rocket was launched
- B. The time it took the rocket to return to the ground
- C. The total distance the rocket flew while it was in flight
- D. The time it took the rocket to reach the highest point in its flight

