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Unit 5 - No Calc. Review



High School HS Algebra
ALG_PS_EOC_NO_CALC_Unit 5

Name: _____ Block: _____

X-values *y-values*

1. If the domain is {0, 2, -6}, what is the range of $y = -2x + 3$?
- A) {0, 7, 29} $-2(0) + 3 = 3$
 B) {0, 7, 15} $-2(2) + 3 = -1$
 C) {3, -1, -9} $-2(-6) + 3 = 15$
 D) {3, -1, 15}
- (MGSE9-12.F.IF.1) Understand Functions

2. Solve the inequality.

$$7x - 9 > 2x + 6$$

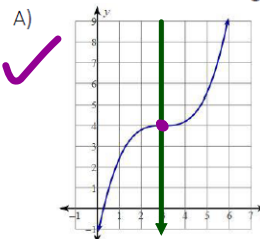
$$\begin{array}{r} -2x \quad -2x \\ \hline 5x - 9 > 6 \\ +9 \quad +9 \\ \hline 5x > 15 \\ \hline x > 3 \end{array}$$

A) $x > 3$
 B) $x > \frac{3}{5}$
 C) $x > -3$
 D) $x > -\frac{3}{5}$

(MGSE9-12.A.REI.3) Linear Equations

Remember to flip sign if ÷ negative #

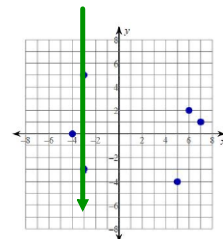
3. Which of the following does not represent a function?



C)

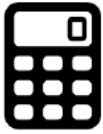
x	y
3	1
7	5
0	-7
-5	-5

B) {(2, 5), (7, 5), (-3, 5), (0, 5)} D



(MGSE9-12.F.IF.1) Understand Functions

Unit 5 - Calc. Review



High School HS Algebra
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Name: _____

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4. What are the x-intercepts of

2pt $a=2$ $b=-3$ $c=-20$ $x-4$

$y = 2x^2 - 3x - 20$

A) $x = -5$ and 2
 B) $x = 5$ and -2
 C) $x = -2.5$ and 4
 D) $x = 2.5$ and -4

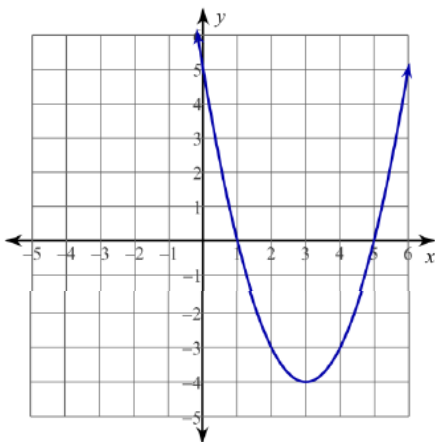
(MGSE9-12.F.IF.8a) Show Zeros, Extrema, Symmetry
ID: 1198

$(2x+5)(x-4) = 0$

$2x+5=0 \rightarrow x = -2.5$
 $x-4=0 \rightarrow x = 4$

5. The equation $y = 2x + 1$ is changed to $y = 2x - 1$. How does this change the graph of the line?

- A) The original line will shift down 1 unit. *down +1*
 B) The original line will shift left 1 unit. *2*
 C) The original line will shift left 2 units. *0*
 D) The original line will shift down 2 units. *-1*
- (MGSE9-12.F.BF.3) Transform Graphs



6. Which equation matches the graph?

- A) $y = (x + 1)(x + 5)$
 B) $y = (x + 1)(x - 5)$
 C) $y = (x - 1)(x - 5)$
 D) $y = (x - 1)(x + 5)$

(MGSE9-12.F.IF.7) Graph Functions

7. If $f(x) = 3^x$ and $g(x) = 3^{x+1} + 6$. Describe the transformations from $f(x)$ to $g(x)$.

- A) left 1 and up 6
 B) left 6 and up 1
 C) right 6 and up 1
 D) right 1 and down 6

(MGSE9-12.F.BF.3) Transform Graphs

8. What is the closed linear form of the sequence 3, 4, 5, 6, 7, ...?

- explicit Arithmetic*
- A) $a_n = 2 + n$
 B) $a_n = 2 - n$
 C) $a_n = 3 + n$
 D) $a_n = 3 - n$
- $a_n = 3 + (n-1)d$
 $a_1 = 3$ $d = 1$
 $a_n = 3 + (n-1)1$
 $a_n = 3 + n - 1$
 $a_n = 2 + n$
- (MGSE9-12.F.BF.1a) Explicit Expression

x	y
0	0
1	7
2	14
3	21

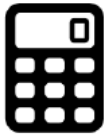
x	y
0	1
1	2
2	4
3	8

9. The *Linear* table on the left is that of a linear function, and the one on the right is that of an *Exponential* function.

Can you tell which function will have a greater value when $x=10$? How?

- A) There is not enough information to make a conclusion.
 B) The linear function is growing faster, because at $x = 3$ the y-value of the linear function is larger.
 C) The exponential function is growing faster, because at $x = 0$ the y-value of the exponential function is larger.
 D) The exponential function is growing faster, because it grows by a factor that is multiplied by the previous y-value instead of being added like the linear function.

(MGSE9-12.F.IF.9) Compare Properties



Name: _____

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$y_2 - y_1$
 $x_2 - x_1$

x	f(x)	g(x)
-3	3	5
-2	2	4
-1	1	3
0	0	2
1	1	1
2	2	0
3	3	1
4	4	2

x_1 y_1
 x_2 y_2

10. Calculate the average rate of change of the function g over the interval $-2 \leq x \leq 2$.

- A) -4
- B) -1
- C) 0
- D) 1

(MGSE9-12.F.IF.6) Average Rate Of Change

11. If the number of bacteria in a colony doubles every 210 minutes and the population is currently 8,000 bacteria, what will the population be in 630 minutes and is it modeled by a linear function or an exponential function?

- A) 24,000; linear function
- B) 24,000; exponential function
- C) 64,000; linear function
- D) 64,000; exponential function

(MGSE9-12.F.LE.1) Linear And Exponential

$$y = 8000(2)^3$$

$$x = \frac{630}{210}$$

$$x = 3$$

$$y = ab^{x^x}$$

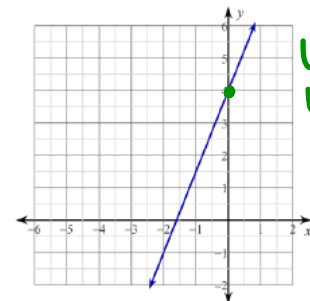
Bacteria Growth

hours	number of bacteria
2	4.5
6	22.781
12	259.493

12. Bacteria in a pond multiplies as shown in the table. If a fungus on a tree decays at half that rate, what is the rate of decay (round to the nearest integer)?

- A) 20%
- B) 25%
- C) 30%
- D) 40%

(MGSE9-12.F.LE.1c) Growth And Decay



y -int. = 4

Function 2

x	y
1	8
2	11
3	14
4	17
5	20

$5 - 3 = 2$
 $8 - 3 = 5$
 $> + 3$

y -int = 5

13. Consider the two functions. Which statement is true?

- A) Function 1 has the greater y-intercept by 1 unit
- B) Function 2 has the greater y-intercept by 1 unit
- C) Function 1 has the greater y-intercept by 4 unit
- D) Function 2 has the greater y-intercept by 4 unit

(MGSE9-12.F.IF.6) Average Rate Of Change