Unit 2 - No Calc. Review

High School HS Algebra
ALG_PS_EOC_NO_CALC_Unit 2

Name:_____   Block:_____

1. What value of x=? makes the relation not a function?

x	y
1	2
?	5
6	8
8	6
5	4

A) -5
B) 0
C) 4
D) 6
(MGSE9-12.F.IF.1) Understand Functions

2. The cost of tuition at Johnson Community College is $160 per credit hour. Each student also has to pay $50 in fees. Model the cost, C, for x credit hours taken.

$$y=mx+b$$
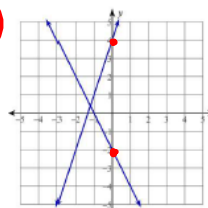
A) C(x)=50x
B) C(x)=160x
C) C(x)=110x
D) C(x)=160x+50
(MGSE9-12.N.Q.2) Descriptive Modeling
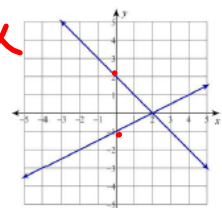
3. Which of the following is the graph of 4+3x=-2x-2?
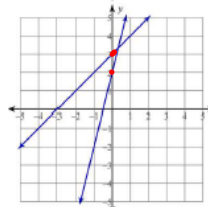
$$m=3 \quad m=-2$$
$$b=4 \quad b=-2$$

A)

C) ✗

B) ✗
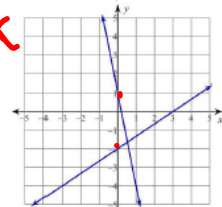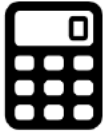
D) ✗

MGSE9-12.A.REI.12) Graph Solutions

Unit 2 - Calc. Review

High School HS Algebra
ALG_PS_EOC_Unit 2

Name:_____ Block:_____

When x = 0

4. What is the y-intercept of the line with the equation
$$3x + 4y = 12?$$
A) 4
B) 3 *(circled)*
C) 2
D) 12

(MGSE9-12.F.IF.4) Interpret Features

Handwritten:
$$3(0) + 4y = 12$$
$$\frac{4y}{4} = \frac{12}{4}$$

$$3x^3 - 7x^2 + 0 + 12$$

5. Simplify.
$$(3x^3 - 7x^2 + 12) - (3x^3 + 6x^2 + 10x)$$
A) $-x^2 + 10x + 12$
B) $-13x^2 - 10x + 12$ *(circled)*
C) $-6x^3 + x^2 - 10x - 12$
D) $-9x^6 - 42x^4 - 10x + 12$

(MGSE9-12.A.APR.1) Polynomial Arithmetic

Handwritten: $-13x^2 - 10x + 12$

6. Solve the inequality.
$$-4m + 3(m + 1) + 4 > 0$$
A) $m < 7$
B) $m > 7$
C) $m < -1$
D) $m < -7$

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

Handwritten:
$$4m + 3m + 3 + 4 > 0$$
$$-1m + 7 > 0$$
$$\frac{-1m}{-1} > \frac{-7}{-1}$$
$$\boxed{m < 7}$$

Top right handwritten:
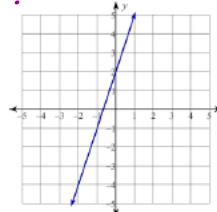$$y = mx + b$$
$$x + 2y = 6$$
$$2y = -x + 6$$
$$\boxed{y = -\frac{1}{2}x + 3}$$

9. Graph:
Solve for y
$$x + 2y = 6$$

A) *(graph)*
B) *(graph)*
C) *(graph - circled)*
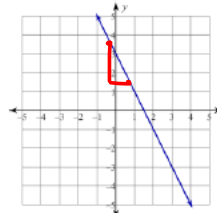D) *(graph)*
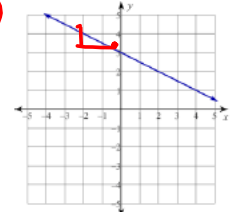
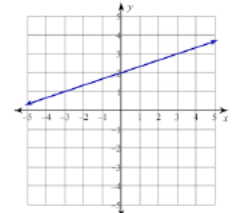(MGSE9-12.A.REI.10) Understand Graphs

10. Multiply: $(x + 2)(2x^2 - 3x + 5)$.
A) $2x^3 - 7x^2 - x + 10$
B) $2x^3 + x^2 - x + 10$
C) $2x^3 + 7x^2 + 11x + 10$
D) $2x^3 - 7x^4 - x^2 + 10$

MGSE9-12.A.APR.1) Polynomial Arithmetic

Handwritten box method:

×	$2x^2$	$-3x$	$+5$
x	$2x^3$	$-3x^2$	$5x$
$+2$	$4x^2$	$-6x$	10

$$\boxed{2x^3 + x^2 - x + 10}$$

7. Solve
$$3(x + 1) - 2x + 4 = -4 + 4(x + 1) - 4x$$
A) x = 1
B) x = 5
C) x = -7
D) x = -9

$3x + 3 - 2x + 4 = -4 + 4x + 4 - 4x$

$x + 7 = 0$

$\dfrac{-7 \quad -7}{}$

$x = -7$

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

8. Allie needs at least 50 hours of community service for social studies class. She already has 20. How many more hours does she need? Write an inequality to model this situation.
A) x + 20 ≤ 50
B) x + 20 ≥ 50
C) x - 20 ≥ 50
D) x + 50 ≥ 20

(MGSE9-12.A.CED.1) Create Equations

11. What is the x-coordinate at the point of intersection for these equations?
$$f(x) = 2.8x - 12$$
$$g(x) = 5.8x + 9$$
A) -7
B) -3
C) 3
D) 7

(MGSE9-12.A.REI.11) Explain Solutions To F(x) = G(x)

$5.8x + 9 = 2.8x - 12$

$\dfrac{-2.8x \qquad -2.8x}{3x + 9 = -12}$

$\dfrac{-9 \quad -9}{}$

$\dfrac{3x}{3} = \dfrac{-21}{3}$ $x = -7$

12. If x + 4y = 18 and x − 4y = 2, then y = ?
A) 2
B) 4
C) 10
D) no solution

(MGSE9-12.A.REI.5) System Of Equations

$x + 4y = 18$
$+ (x - 4y = 2)$
$\dfrac{}{2x = 20}$ $x = 10$

$10 - 4y = 2$

$-4y = 2 - 10$

$\dfrac{-4y}{-4} = \dfrac{-8}{-4}$

$y = 2$

13. To solve this system of equations by elimination, what operation could be used to eliminate the y-variable and find the value of x?

4: 4, 8. 12, 16
3: 3, 6, 9, 12, 15

$$2x - 4y = 6 \quad \times 3$$
$$-3x + 3y = 12 \quad \times 4$$

~~A)~~ add 3 times the second equation to 4 times the first equation

B) add 4 times the second equation to 3 times the first equation

~~C)~~ subtract 3 times the second equation from 4 times the first equation

~~D)~~ subtract 4 times the second equation from 3 times the first equation

(MGSE9-12.A.REI.5) System Of Equations

14. Given 7cx + b = a, rearrange the equation for x, in **Literal Equations** terms of a, b, and c.

A) $x = \dfrac{7c}{a+b}$

B) $x = \dfrac{7c}{a-b}$

C) $x = \dfrac{a+b}{7c}$

D) $x = \dfrac{a-b}{7c}$

$$7c\boxed{x} + b = a$$
$$\phantom{7c\boxed{x}} - b \quad -b$$
$$7c\boxed{x} = a - b$$
$$\frac{7c\boxed{x}}{7c} = \frac{a-b}{7c}$$

$$\boxed{x = \frac{a-b}{7c}}$$