

Key

Name: _____ Date: _____ Period: _____

QCA 1 Pre-AP Review:

1) Simplify: $\frac{24m^8n^9p^0}{-6m^2n^{-3}}$

$-4m^6n^{12}$

÷/-

2) Simplify: $(5x^2 - 3) + (3x^2 + 3x) - (4x - 8)$

$8x^2 - x + 5$

CLT

3) Write an equivalent expression: $\frac{(-6x^2y^6z)(x^3y)}{12x^5y^2z^{-3}}$

$\frac{-6x^5y^7z}{12x^5y^2z^{-3}}$

$\frac{-y^5z^4}{2}$

or $-\frac{1}{2}y^5z^4$

÷/-

4) Find the perimeter of a rectangle with a base of $(3x - 2)$ and a height of $(x + 2)$.

Distrib.
CLT

$P = 2l + 2w$
 $P = 2(3x - 2) + 2(x + 2)$
 $P = 6x - 4 + 2x + 4$

$P = 8x$

5) A rectangular billboard sign has base of $8x^2y^4$ square feet and a height of $2x^3y$ feet. What is the area of the billboard?

x/+

$A = lw$
 $A = 8x^2y^4(2x^3y)$
 $A = 16x^5y^5$

6) Evaluate the following function at $f(-2)$:
Use your calculator.

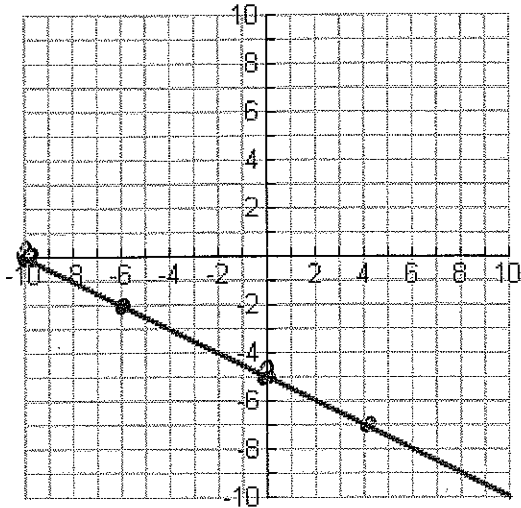
$f(x) = 3x^2 + 4x - 7$
 $f(-2) = 3(-2)^2 + 4(-2) - 7$
 $f(-2) = -3$

7) If a function is defined by $f(x) = 10 - 3x$ and the domain is $\{1, 2, 4, 6\}$, then what is the range?

- $(1, 7)$
- $(2, 4)$
- $(4, -2)$
- $(6, -8)$

$\{-8, -2, 4, 7\}$
 $L \rightarrow G$

8) Create a table from the given graph. You may choose any 4 points.



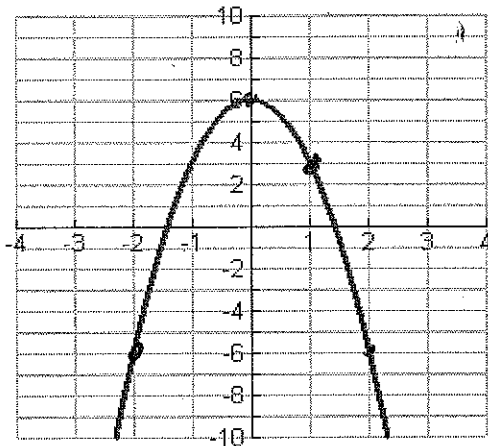
x	f(x)
-10	0
-6	-2
0	-5
4	-7

9) Using the table from question #8, Identify the following:

Function / Not a Function

R: $\{-7, -5, -2, 0\}$

10) The graph below represents a function:



What is f(1): 3

What is f(-2): -6

What is f(0): 6

What is f(2): -6

What is x when f(x)=6 0
 $\boxed{x=0}$

11) If (x, -14) is a solution to the equation $3x - 2y = 8$, what is the value of x?

$$3x - 2(-14) = 8$$

$$3x + 28 = 8$$

$$\begin{array}{r} 3x + 28 = 8 \\ -28 \quad -28 \\ \hline 3x = -20 \\ \frac{3x}{3} = \frac{-20}{3} \end{array}$$

$$\boxed{x = \frac{-20}{3}}$$

12) If (5, y) is a solution to the equation $8x + 3y = -10$, what is the value of y?

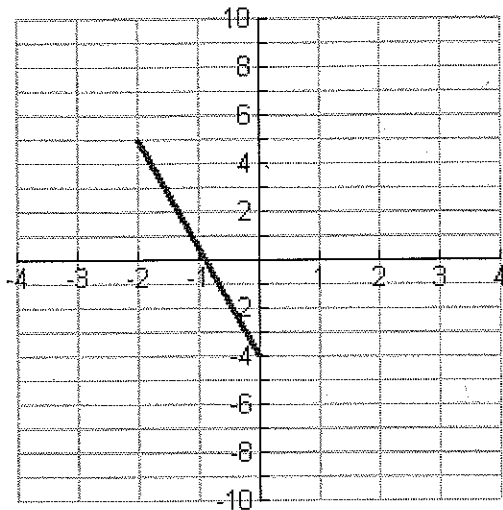
$$8(5) + 3y = -10$$

$$40 + 3y = -10$$

$$\begin{array}{r} 40 + 3y = -10 \\ -40 \quad -40 \\ \hline 3y = -50 \\ \frac{3y}{3} = \frac{-50}{3} \end{array}$$

$$\boxed{y = \frac{-50}{3}}$$

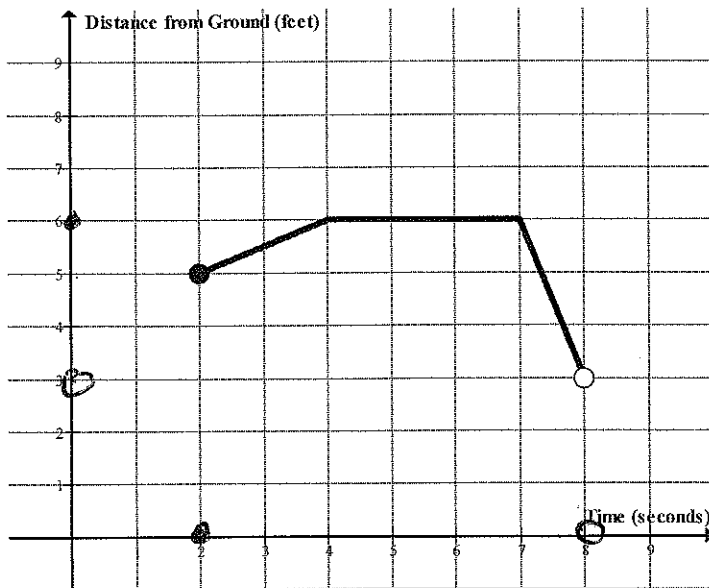
13) What is the domain of the line segment on the graph below? $-2 \leq x \leq 0$



14) StuCo is selling t-shirts to raise money for the Spring Fling Dance. After the cost of making the t-shirts is deducted, the remainder of the money collected will be deposited in an account to purchase decorations and food for the dance. This situation can be represented by the equation $P = 10t - 600$, where P , the profit is a function of t , the number of t-shirts sold. Identify the independent and dependent quantities and complete the dependency statement.

Independent: t-shirts sold Dependent: Profit
Profit depends on # of t-shirts sold

15) Find the Domain and Range of the graph below:



Domain: $2 \leq x < 8$
 Range: $3 < y \leq 6$

16) Lisa was holding a balloon and let go. A slight breeze carried the balloon up until it hung on a tree limb. The branch punctured the balloon and it fell to the ground. The path of the balloon is represented by the graph below. Use the graph to answer the following questions.

What is the independent quantity?

time (seconds)

a) What is the dependent quantity?

Distance from Ground (feet)

b) What is the domain?

$0 \leq x \leq 9$

c) What is the range?

$0 \leq y \leq 6$

d) When was the balloon moving the fastest?

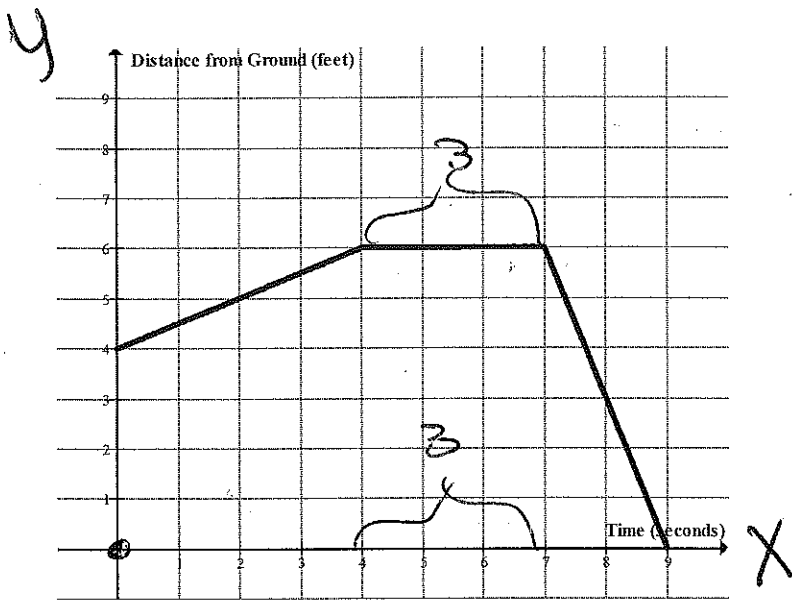
from 7-9 seconds

e) How long was the balloon caught on the tree branch?

3 seconds

f) How high was the branch off the ground?

6 feet



17) The formula below is used to find the V , the volume of a rectangular prism, where l is the length, w is the width, and h is the height.

$$V = lwh$$

Solve the equation for the term of w .

$$w = \frac{V}{lh}$$

18) Solve the literal equation $P = 2l + 2w$ for the term w .

$$\begin{array}{r|l} P = 2l + 2w & \\ -2l & \\ \hline P - 2l & = 2w \\ \hline \frac{P - 2l}{2} & = \frac{2w}{2} \\ \hline \frac{P - 2l}{2} & = w \end{array}$$

$$w = \frac{P - 2l}{2}$$