

**Integrated 2 Math
Algebra Essentials Quiz**

Name: _____

Date: _____ Block: _____

Show all work and write all answers on this paper.

1. Solve for x .

5, 2 marks (K, C)

a) $3x + 12 = 6(x + 3)$

b) $\frac{3}{4}x + 7 = 16$

2. Solve for b : $V = \frac{1}{3}bh$

2 marks (K)

3. Mrs. Kopp's motorbike uses about 0.03 liters of gasoline for every km traveled.

a) Letting y represent the number of liters of gasoline consumed, and letting x represent the number of kilometers traveled, write an equation in slope-intercept form ($y = mx + b$ form) that models this scenario.

2 marks (A)

b) Briefly explain why, if you were to graph the above equation, the y -intercept would be 0.

1, 1 marks (T, C)

c) Show that the point (200, 6) works in your equation (and thus that your equation is correct).

1, 1 marks (K, C)

d) Briefly explain the meaning of the point (200, 6).

2 marks (C)

4. Consider the equation $50x + 125y = 1000$, which models the cost, in pesos, of lunch for a group of people.

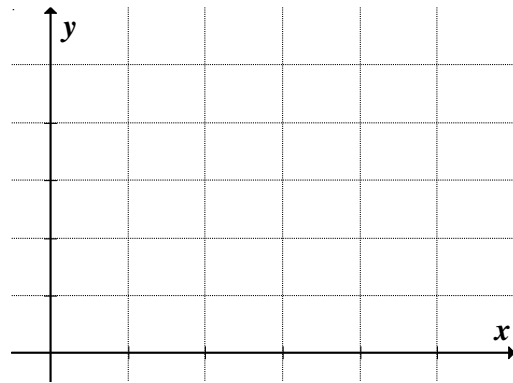
- a) If x represents “the number of drinks purchased by the group of people”, what could y possibly represent? 1 mark (A)

y represents _____.

- b) Complete this data table by adding three valid points that are on the above line. 3 marks (A)

x	y
5	6

- c) Sketch a graph of the line on the axes provided. Be sure to label your scale on the axes. 3 marks (K)



- d) Rewrite the above equation into slope-intercept form ($y = mx + b$ form). 2 marks (K)

- e) Explain what the slope means, in the context of this scenario. 2 marks (T)

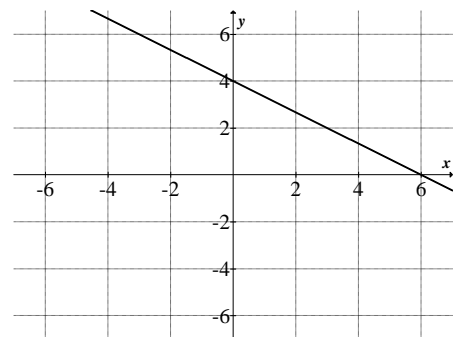
- f) Briefly explain **one** way in which you could confirm/justify/check your work in questions 4b,c, or d. 1 mark (T)

5) Write an equation in standard form ($ax + by = c$) for the line that passes through (1, 7) and (13, 15).

4,1 marks (K,C)

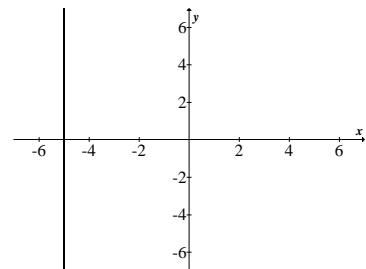
6) Write an equation (in any form) for this line:

3 marks (A)



7) Write an equation for this line:

1 mark (K)



8) Write an equation for the line that is **parallel** to $y = 3x + 5$ and passes through the point (6, -2).

4 marks (A)

9) Jericho is a painter who charges 700 PhP per day of work, plus a one-time fee of 500 PhP for supplies and transportation.

a) Define variables x and y , and write a linear equation to model this scenario.

3, 1 marks (A, C)

b) Use your equation to predict the total cost of hiring Jericho for 8 days. Show all your work.

2 marks (A)

c) If it cost 9600 PhP to hire Jericho, find out how many days the painting took. Present your solution using **two different methods**, showing all your work for each method.

4 marks (T)

Marks by Criteria				Totals
K	A	C	T	
/18	/18	/8	/8	/52