

# Collins Writing Assignment

## Algebra 1 2007-2008

The following problem was taken from the 2007 Spring MCAS Exam. This question will be your Collins writing assignment for the second quarter. This is a quiz grade. It is due by Thursday, December 20<sup>th</sup> at the beginning of class. I won't accept it late.

- FCA's
- 1) Correct Answers. 75 points (15 points each)
  - 2) Explanations are in full sentences. 15 points
  - 3) State 3 reasons why you think I chose this problem for a Collins assignment. 10 pts

Rodney is starting a horse-grooming business.

- His initial expense will be a one-time cost of \$200 for equipment.
- His earnings will be \$40 per horse groomed.

Rodney's profit will be equal to his earnings for all horses groomed minus his initial expense.

- a. What will be Rodney's profit if 15 horses are groomed? Show or explain how you got your answer.
- b. On a grid plot eight points with coordinates  $(x, y)$ , in which  $x$  and  $y$  are defined as follows:
  - $x$  = the number of horses groomed (in whole numbers from 0 through 7)
  - $y$  = Rodney's profit, in dollars, if  $x$  horses are groomed

Be sure to label the  $x$ -axis and  $y$ -axis, indicate the scale on each axis, and include a title for your graph.

- c. Write an equation of the line that contains all of the points you plotted in part (b). Show or explain how you determined your equation.
- d. What is the  **$x$ -intercept** of the line represented by your equation in part (c)? Show or explain how you got your answer.
- e. Explain the meaning of the  $x$ -intercept you determined in part (d) in terms of the context of this problem.