

MATH110(0402) Elementary Mathematical Models

Quiz 2, Wednesday, February 11, 2009

Name: _____

Show all work clearly and in order, and circle your final answers. Justify your answers algebraically whenever possible. Calculator is allowed in this quiz. You have 15 minutes to take this 12 point quiz. Only the first 10 points you gain will count.

1. (8 points) A survey of students yielded the following data:

Test I Score	79	69	58	92	98	77	86	49
Overall Score	88	75	67	98	96	85	90	39

a) Using linear regression find the “best fit” line for these data (let x = Test I Score, y = Overall Score).

b) What is the y -intercept of this line? What does it represent in terms of this model?

c) What is the slope of this line? What does it represent in terms of this model?

d) According to the model found in part a), if a student had a score of 77% on Test I, what overall score would you expect them to get? Is this the same score as that given in the data? If not, why not?

e) According to the model found in part a), what Test I score would you expect a student to have received if they had an overall score of 92%?

2. (4 points) How many solutions does the following linear equations have? Find them all.

$$x + y = -9$$

$$2x - 3y = 6$$