KE Name:

Math 1040-001 Quiz 7 April 22, 2016

I asked four people on the street how many cats and dogs they owned and here were the answers to this (very rough) survey:

Cats	Dogs	
0	0	
1	1	
1	2	
2	2	

1. (5 points) In the space below, graph the four data points, with: cats = x and dogs = y



2. (5 points) Which of these is the correlation coefficient between cat and dog ownership given this data? (Circle the correct answer.)

(a) r = -0.85(b) r = -0.15(c) r = 0.15(d) r = 0.85 (very nearly on a life of politive slope)

Turn the test over! There is a second page!!

3. (5 points) Fill out the following table and find the indicated sums:

x	y	x^2	y^2	xy
0	0	0	0	0
1	1	1	1	1
1	2		4	2
2	2	4	4	4

$$\sum x = 4 \qquad \sum y = 5 \qquad \sum x^2 = 6 \qquad \sum y^2 = 4 \qquad \sum xy = 7$$

4. (5 points) Using the following formulas:

$$m = \frac{n \sum xy - (\sum x)(\sum y)}{n \sum x^2 - (\sum x)(\sum x)}$$

and

$$b = \frac{\sum y}{n} - m \cdot \frac{\sum x}{n}$$

write the equation for the line of regression for the data.

$$m = \frac{4 \cdot 7 - 4 \cdot 5}{4 \cdot 6 - 4 \cdot 4} = \frac{8}{8} = 1$$

$$b = \frac{5}{4} - 1 \cdot \frac{4}{4} = \frac{1}{4}$$

$$y = x + \frac{1}{4}$$

2