

## MATH110(0402) Elementary Mathematical Models

Quiz 6, Wednesday, April 15, 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.** (*2 points*) The probability that Jeff will take a nap today is .55. The probability that he will watch NBA game today is .30. The probability that he will do both of these activities today is .25. What is the probability that he will take a nap or watch NBA game today?

**2.** (*8 points*) An experiment is conducted in which a sequence of two **different** letters is randomly chosen from the letters  $a, d, e, i, k$ .

a) Describe the sample space of equally likely events for this experiment.

b) List the elements in the event A, that the first digit is a vowel, and event B, that second digit is a vowel.

c) Find the probability that the second digit is a vowel, given that the first digit is a vowel, i.e.  $P(B|A)$ .

d) Are the two events independent to each other? Justify your answer.

**3.** (*2 points*) A die is weighted in such a way that each of 3 and 4 is twice as likely to come up as 1. Also, 2, 5, and 6 are half as likely to come up as 1. Find the probability distribution.