Math 153 - Quiz 6

March 14, 2013

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (5 points) Suppose A and B are events such that $P(A) = 0.8125$, $P(\overline{B}) = 0.35$, and $P(A|B) = 0.8$.

   (a) Find $P(B)$.

   (b) Find $P(A \cap B)$.

   (c) Find $P(B|A)$.

   (d) Find $P(A \cup B)$.

   (e) Are A and B independent? Explain or show work.

2. (5 points) Jar 1 contains 2 red marbles and 3 blue marbles. Jar 2 contains 4 blue marbles and 1 green marble. A marble is selected from Jar 1 and placed into Jar 2. Then a marble is selected from Jar 2.

   (a) Sketch the complete tree diagram for this experiment. Include the probabilities of each path.

   (b) What are the odds in favor of selecting a blue marble from Jar 2?