Name _____ KEY _____

Instructions: Show all work. Answers without work can only be graded all or nothing. Partial credit is available only when work is shown. Answer all parts of each problem. Provide explanations as indicated. You may use Excel to complete any required statistical calculations or graphs. Submit any Excel work with assignment. Do not say "see Excel" for answers, but write or paste them into this document. Exact answers are preferred unless specifically asked to round.

1. A bowl is filled with 10 black marbles, 3 blue marbles, 8 red marbles, 11 green marbles and 5 clear marbles.

   $10+3+8+11+5 = 37$

   a. What is the probability of picking a green marble?

   $11/37$

   b. What is the probability of not selecting a clear marble?

   $1 - \frac{5}{37} = \frac{32}{37}$

   c. What is the probability of getting a red or blue marble?

   $11/37$

   d. What is the probability of getting a black marble followed by a red marble?

   $\frac{10}{37} \times \frac{8}{36} = \frac{20}{333}$

   e. What is the probability of getting a purple marble?

   0 (there are no purples)

2. What does it mean when we say two events are independent?

   Knowing the outcome of one event does not affect the probability of the other event.

3. What does it mean when we say two events are mutually exclusive?

   They cannot both happen at the same time.