AFM Unit 8: Multiplying Probability HW 2

1. If the probability that person A will be alive in 20 years is 0.7 and the probability that person B will be alive in 20 years is 0.5, what is the probability that they will both be alive in 20 years?

2. Two balls are drawn successively without replacement from a box which contains 4 white balls and 3 red balls. Find the probability that:
   a.   the first ball drawn is white and the second is red

   b.   both balls are red

3. A bag contains 5 white marbles, 3 black marbles and 2 green marbles. In each draw, a marble is drawn from the bag and not replaced. In three draws, find the probability of obtaining white, black and green in that order.

4. Find the given probability if you are flipping a coin and rolling a dice:
   a.   What is the probability of tossing a head and rolling a 5?

   b.   What is the probability of tossing a tail and rolling an even number?

   c.   What is the probability of tossing a head and rolling a number less than 6?

   d.   What is the probability of tossing a head and rolling a number greater than 6?

5. State whether the events are dependent or independent:
   a.   Choosing the winner and the runner-up at a dog show.

   b.   Drawing a marble from a bag, not replacing it, and then drawing a second marble.