Conditional Probability

1. A bag of sweets contains 3 red sweets and 4 yellow sweets. Tom takes one sweet without looking and then passes the bag to Harry who also chooses a sweet without looking.

   If Tom chooses a red sweet, what is the probability that Harry chooses:

   a. a red sweet
   b. a yellow sweet?

2. A bag contains 11 lettered tiles spelling out the word MATHEMATICS. A tile is taken out without being replaced, then another tile is taken out.

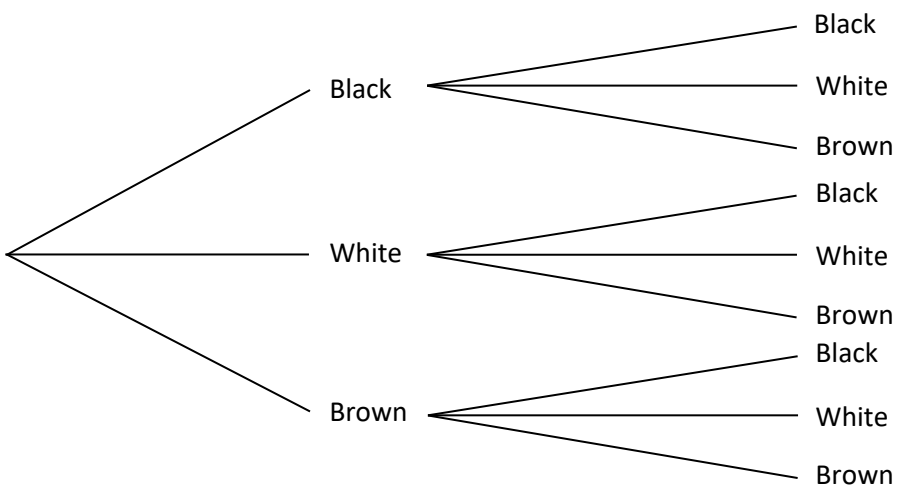
   What is the probability of choosing:

   a. Two T's
   b. E followed by I
   c. A followed by M
   d. T and H (in any order)?

3. A draw contains 20 socks. 10 are black, 6 are white and 4 are brown.

   One sock is chosen randomly without replacement, followed by a second sock being chosen randomly.

   a. Put this information into a probability tree diagram.



   What is the probability of choosing:

   a. 2 black socks
   b. a white sock and a brown sock
   c. two matching socks
   d. two different socks?