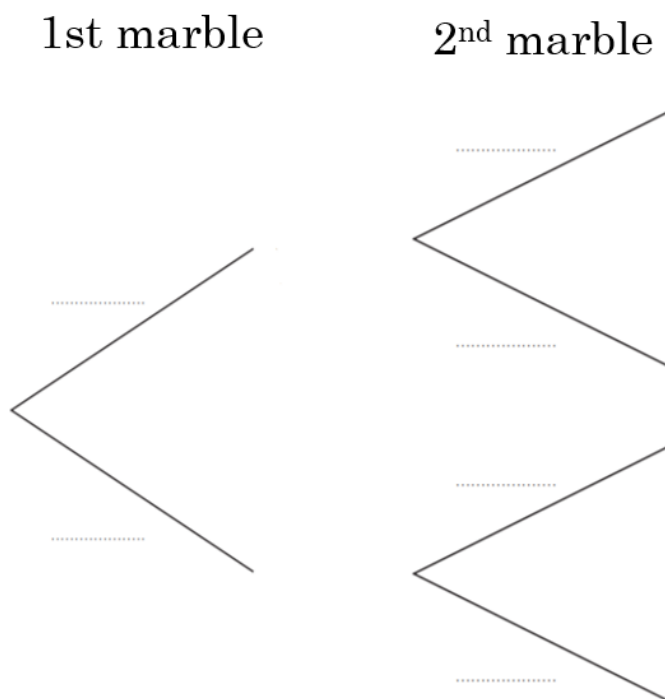




Probability Trees Exam Practice

Q1. A bag contains 4 red marbles and 8 green marbles. Mike chooses one marble at random from the bag, and then chooses a second marble after he replaces the first.

a) Complete the tree diagram below:



Answer: _____
(2 marks)

b) Find the probability that the two marbles of are different colours

Answer: _____
(2 marks)



Q2. Bob always takes an umbrella and his wallet to work each day when he remembers them. The probability that Bob forgets his umbrella is $\frac{5}{12}$ whilst the probability he remembers his wallet is $\frac{2}{3}$

a) Draw a tree diagram to show this situation.

Answer: _____
(2 marks)

b) Find the probability that he forgets both his umbrella and his wallet.

Answer: _____
(2 marks)

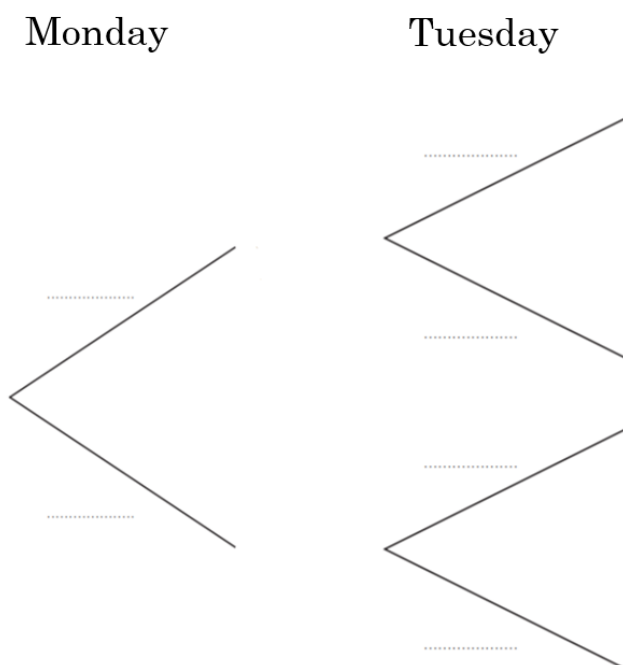
c) During a 30 day period, estimate the number of days he forgets both his items

Answer: _____
(2 marks)



Q3. The probability it snows on Monday is 0.4, and 0.15 on Tuesday.

a) Complete the tree diagram below showing this situation:



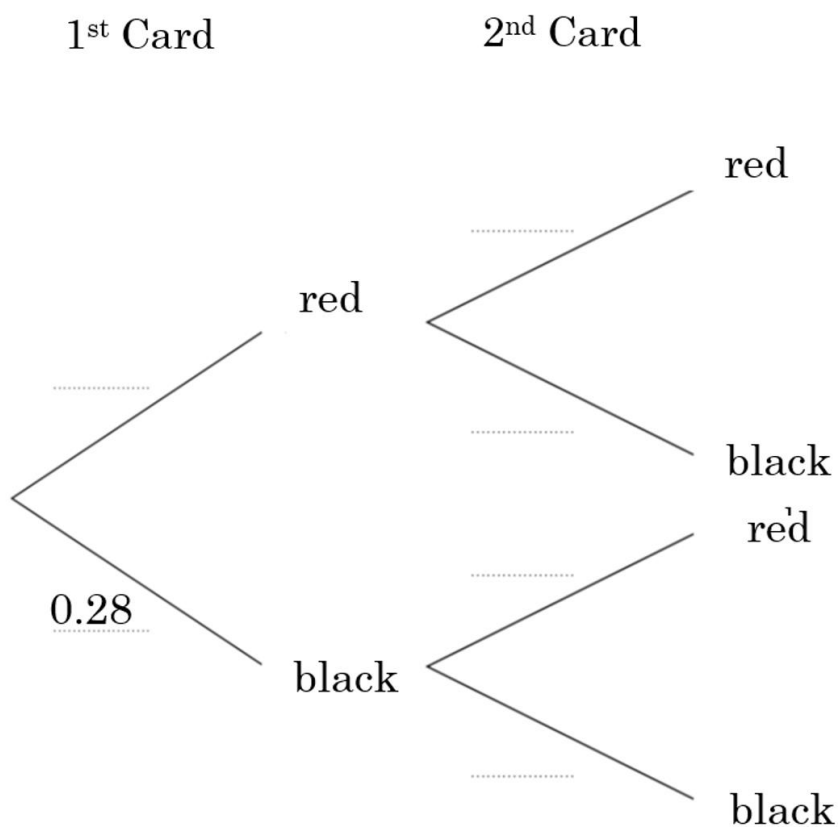
Answer: _____
(2 marks)

b) Find the probability that it does not snow on either day.

Answer: _____
(2 marks)



Q4. Tara plays a card game which has either red or black cards being drawn from a pack of 20 cards.
Using the diagram, find the probability that she gets a red and a black card if she chooses 2 cards with replacement.

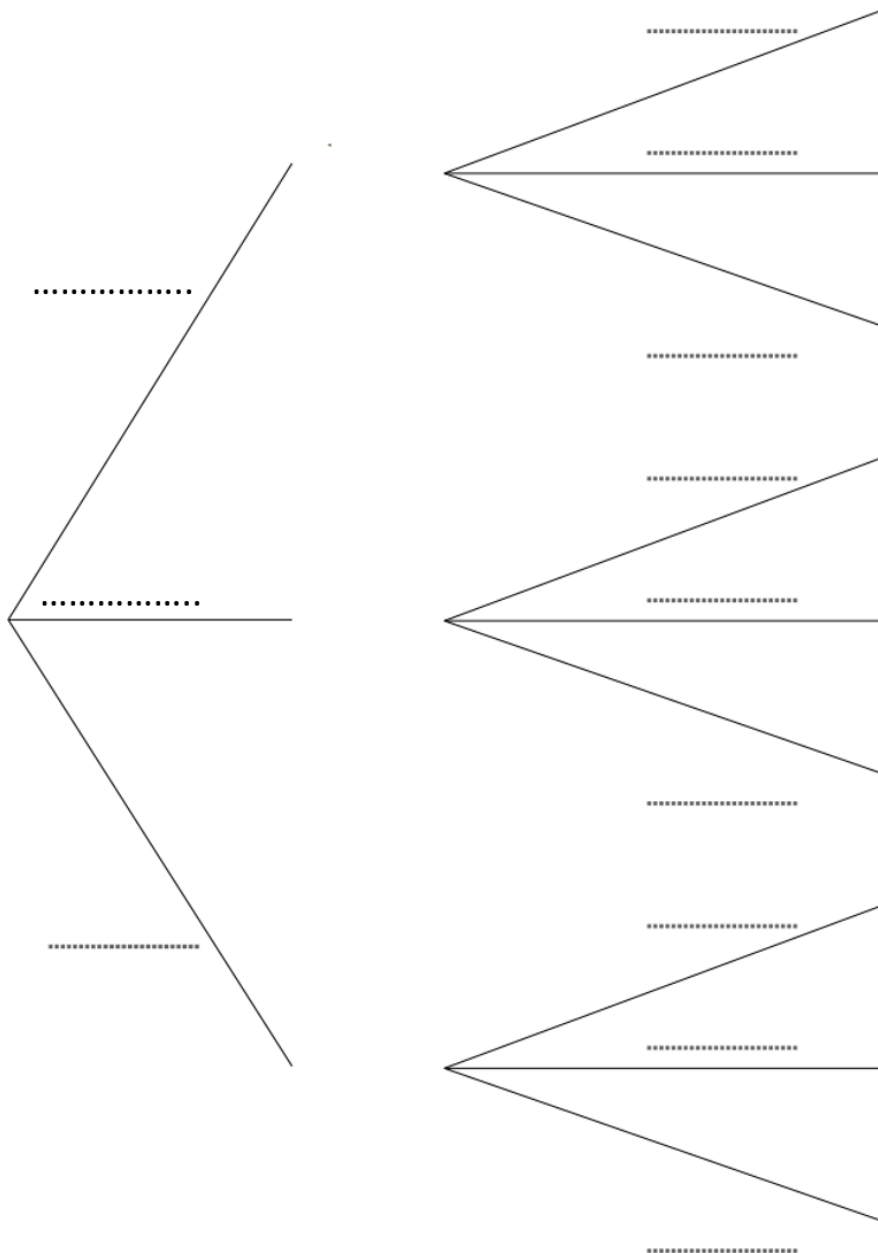


Answer: _____
(2 marks)



Q5. A bag contains 5 green balls, 3 yellow balls and 7 red balls. Tim selects two balls from the bag where he replaces the first marble before drawing out the second.

a) Complete the tree diagram representing this situation:



Answer: _____
(3 marks)

b) Find the probability that Tim selects 1 yellow ball only



Answer: _____
(3 marks)

Q6. In a driving test, a student has unlimited attempts to pass. The probability of passing each time is $\frac{3}{5}$.

- a) Draw a tree diagram showing all the possible outcomes up to and including the third attempt.

Answer: _____
(3 marks)

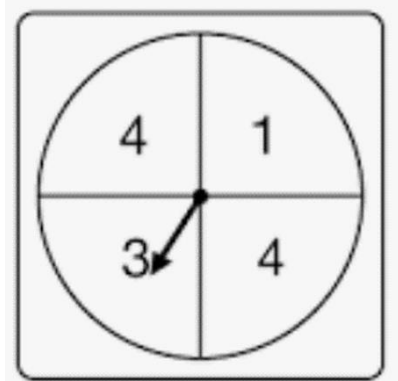
- b) Sam eventually passes his test, with the probability of this event being $\frac{384}{390625}$.

Work out the number of times he failed his driving test.

Answer: _____
(2 marks)



Q7. Ben spins the spinner below twice, and records each score, before adding them together.



a) Draw a tree diagram to show this situation.

Answer: _____
(2 marks)

b) Hence find the probability that Ben obtains a score more than 3.

Answer: _____
(3 marks)



Q8. Amy is playing a game involving throwing balls at a target. The probability that she wins on her first attempt is 0.3. The chance of her winning on her second attempt is $\frac{1}{2}$ the chance of her winning on her first attempt, and the chance of her winning on her third attempt is $\frac{1}{2}$ of the chance of her winning on her second attempt.

a) Find the probability that she hits the target every time on three goes.

Answer: _____
(2 marks)

b) Find the probability that she wins on her third go, and just once in her first two attempts.

Answer: _____
(3 marks)