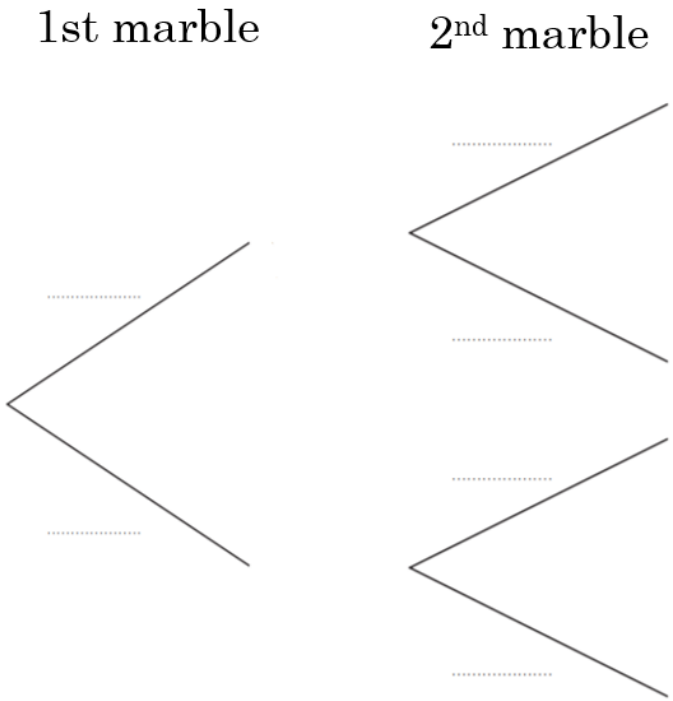
Conditional Probability Exam Practice

Q1. A bag contains 3 red marbles and 9 green marbles. Jim choses one marble at random from the bag, and then chooses a second marble without replacement.

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. Ron either takes the car, the train or the taxi to work. The probability that Ron takes the car or the train is $\frac{5}{12}$ and $\frac{1}{9}$ respectively.

If he goes by car, the probability he is late is $\frac{3}{4}$, if he goes by train, the probability he is on time is $\frac{1}{5}$, and if he takes a taxi the probability he is late is $\frac{3}{10}$.

Find the probability that Ron is late for work.

Answer: _____

(4 marks)

Q3. The table compare the number of cars owned by owner of homes with different numbers of bedroom.

		No. of cars			
		1	**2**	**3**	Total
No. of bedrooms	**1**	28	43		
	2		55	28	92
	3		39	18	65
	4	2	23		29
	5 or more			3	17
	Total		168	82	303

a) Find the probability that a randomly selected home has 6 bedrooms and 3 cars.

Answer: _____

(2 marks)

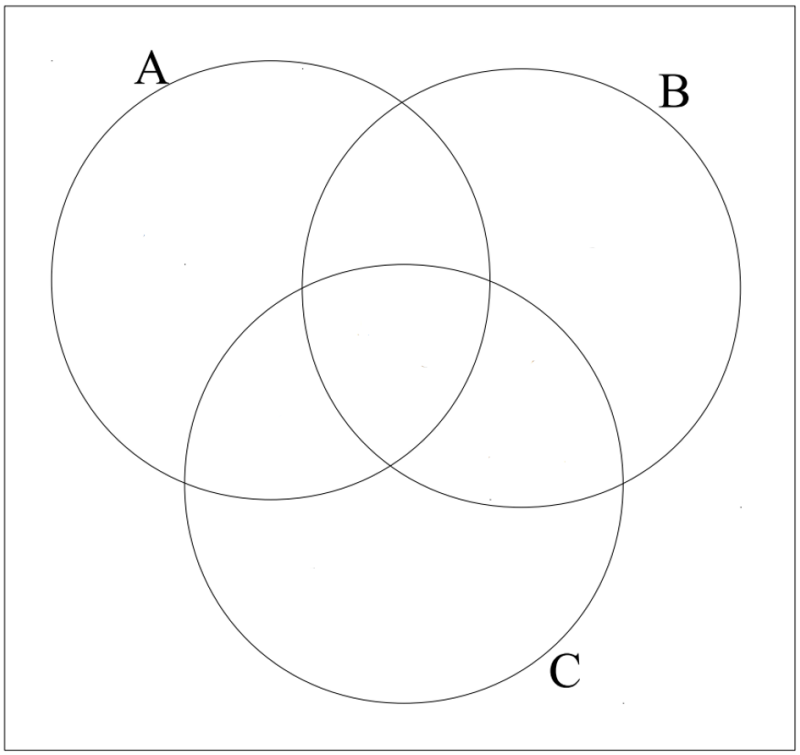
b) Given that a randomly selected home has 2 cars, find the probability that the home has at most 3 bedrooms.

Answer: _____

(2 marks)

Q4. 40 students were asked what is their favourite flavour of ice-cream.

15 liked banana but not apple;
8 like all three flavours;
13 liked cherry and apple;
2 liked only cherry;
5 did not like any of the 3 flavours;
9 liked apple and banana and
20 liked cherry and banana.



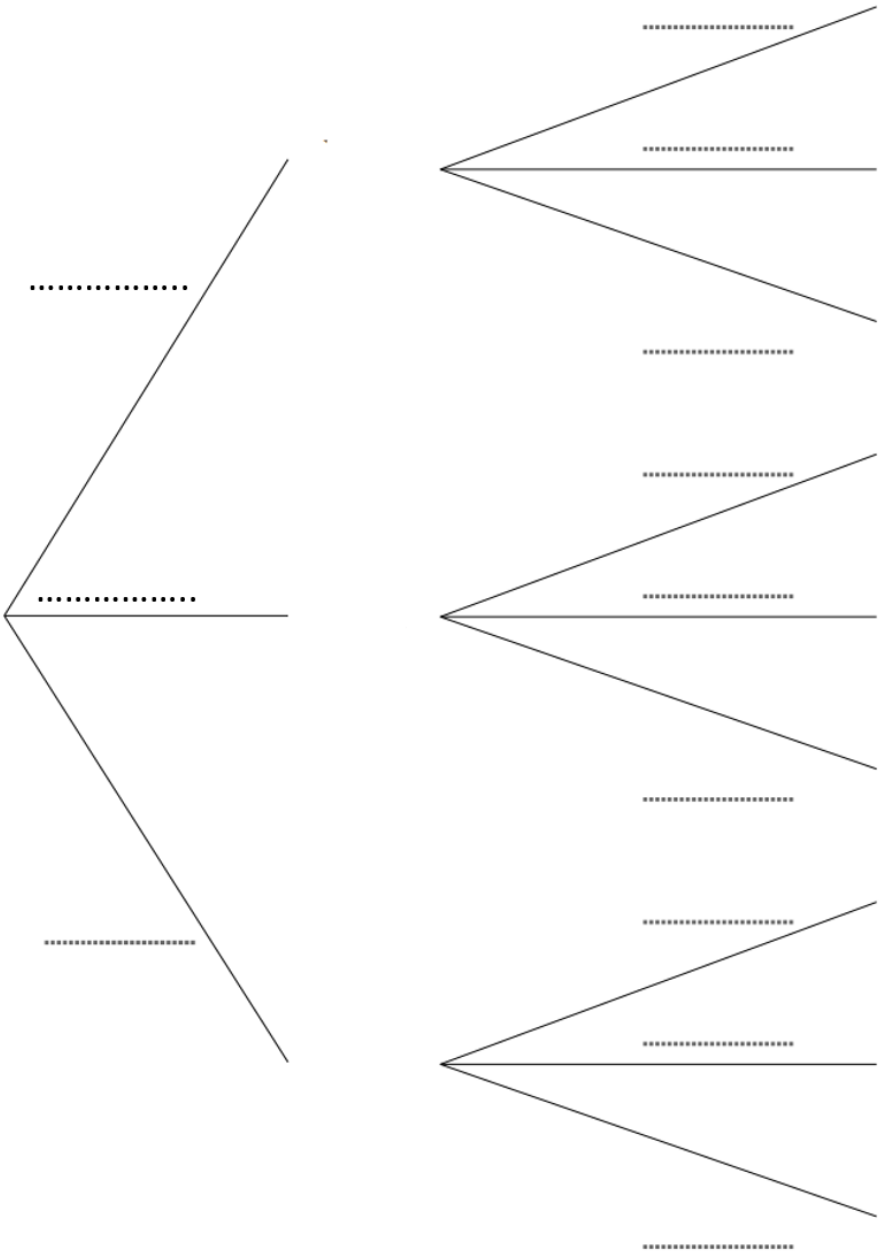
Three students are chosen at random. Find the probability they all like cherry ice-cream. [You may use the Venn diagram to help you.]

Answer: _____

(4 marks)

Q5. A bag contains 3 green balls, 5 yellow balls and 2 red balls.
Mary selects two balls from the bag without replacement.

a) Complete the tree diagram representing this situation:



Answer: _____

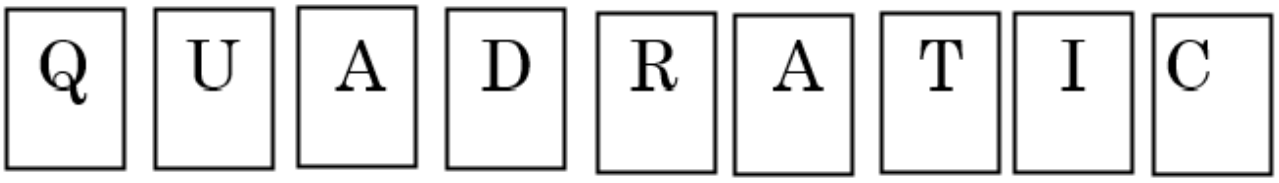
(3 marks)

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

Answer: _____

(3 marks)

Q6. Rob selects 3 cards from the set below, without replacement.



Find the probability that 2 of the letters in his choice are the same.

Answer: _____

(4 marks)

Q7. A sixth form contains 120 students in total, and each one plays either tennis or cricket.

	Tennis	Cricket
Lower 6th Form	30	
Upper 6th Form	40	35

Two students are selected at random. Find the probability that they both play the same sport.

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Answer: _____

(4 marks)

Q8. A jar contains n chocolates of which 7 are soft-centres. Sam selects two chocolates from the jar without looking. The probability that he picks out 2 soft-centres is $\frac{1}{10}$.

Find the number of chocolates in the jar which are not soft-centres.

Answer: _____

(5 marks)