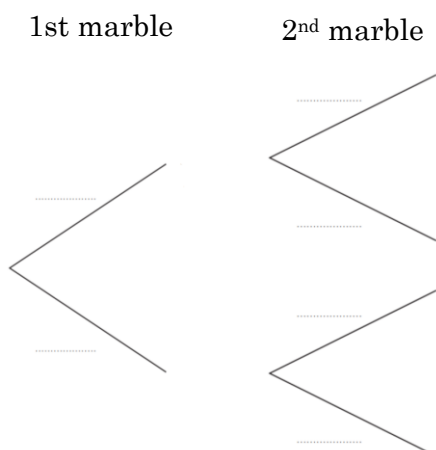




Conditional Probability Exam Practice

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

a) Complete the tree diagram [2]



b) Find the probability that the two marbles of different colours [2]

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.

[4]

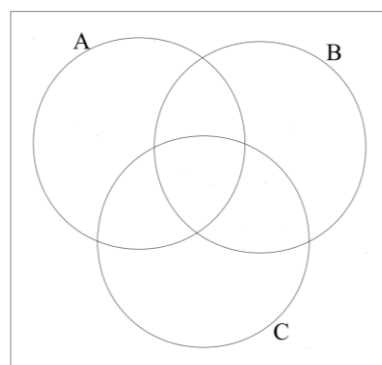
Q3. The no. of cars owned by people compared to the no. of bedrooms their homes have is shown below:

		No. of cars			Total
		1	2	3	
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

i) Find the probability that a randomly chosen home has 6 bedrooms & 3 cars

ii) Given that a randomly selected home has 2 cars, find the probability the home has at most 3 bedrooms. [4]

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.



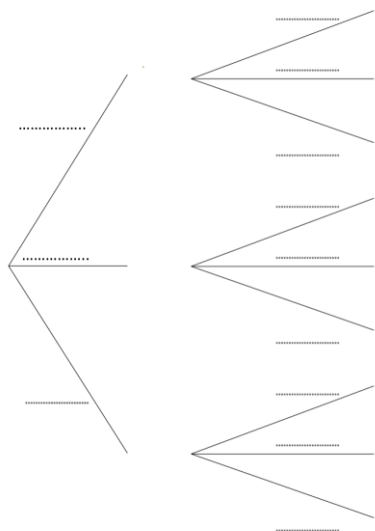
Three students are chosen at random. Find:

the probability they all like cherry [4]



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 [3]



b) Find the probability that Mary selects 1 yellow ball only [3]

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.



[4]

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

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

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

[4]

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.

[5]