BECA / Huson / IB Mathematics Name:
9 December 2019

Homework: Using trees to organize situations

***Note**: For this question, it is important that you show your working and explain your method clearly.*

1. A box contains 10 coloured light bulbs, 5 green, 3 red and 2 yellow. One light bulb is selected at random and put into the light fitting of room A.

   (a) What is the probability that the light bulb selected is

   (i) green?

   (1)

   (ii) not green?

   (1)

   A second light bulb is selected at random and put into the light fitting in room B.

   (b) What is the probability that

   (i) the second light bulb is green given the first light bulb was green?

   (l)

   (ii) both light bulbs were not green?

   (2)

   (iii) one room had a green light bulb and the other room does not have a green light bulb?

   (3)

   A third light bulb is selected at random and put in the light fitting of room C.

   (c) What is the probability that

   (i) all three rooms have green light bulbs?

   (2)

   (ii) only one room has a green light bulb?

   (3)

   (iii) at least one room has a green light bulb?

   (2)

(Total 15 marks)

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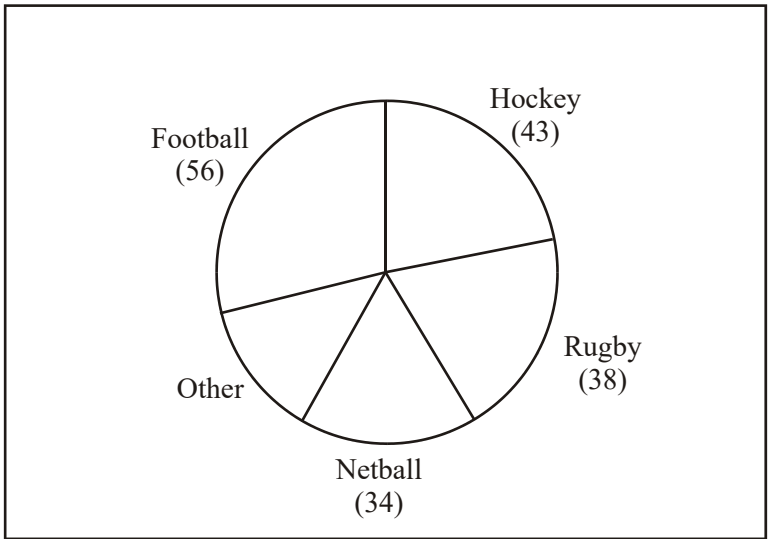
2. In a school, 180 pupils are asked which is their favourite outdoor sport in winter. The pie chart shows the result of the survey. The diagram is **not** accurately drawn.



(a) Calculate the angle of the sector representing rugby.

(b) Estimate the probability that a pupil's favourite outdoor sport in winter will be hockey.

Working:

Answers:

(a) ……..

(b) ……..

(Total 4 marks)