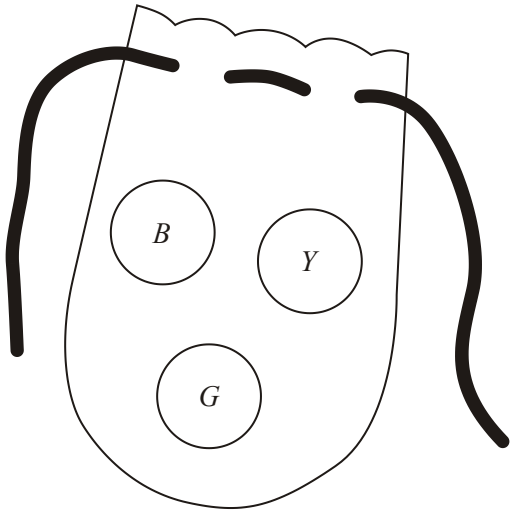
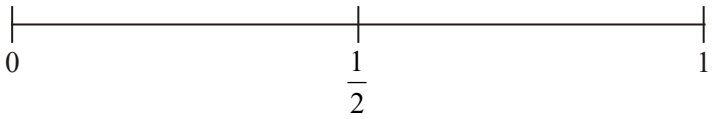
1. There are three beads in a bag.
One bead is blue, one bead is yellow and one bead is green.



Zoe takes a bead at random from the bag.

(a) On the probability scale, mark with the letter *B* the probability that she takes a blue bead.



(1)

Zoe now throws a coin.
One possible outcome for the bead and the coin is (green, heads).

(b) List all the possible outcomes for the bead and the coin.
One has already been done for you.

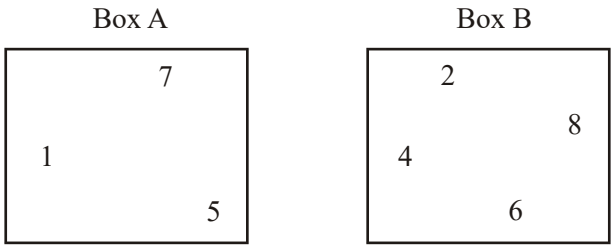
(green, heads) .....

.....

.....

(2)
(Total 3 marks)

2. Michael picks one number from Box A.
He then picks one number from Box B.



List **all** the pairs of numbers he could pick.
One pair (1, 2) is shown.

(1, 2) ...……...

……...

……...

(Total 2 marks)

3. Iqbal eats in a cafe.
He can choose **one** main course and **one** piece of fruit.

Main Course	**Fruit**
Fish Lamb Salad	Apple Banana Pear

One possible combination is (Fish, Pear).

Write down all the possible combinations that Iqbal can choose.
The first one has been done for you.

...(F , P).....

.....

.....

(Total 2 marks)

4. Ishah spins a fair 5-sided spinner.
She then throws a fair coin.

(a) List all the possible outcomes she could get.
The first one has been done for you.

(1, head) .....

.....

(2)

Ishah spins the spinner once and throws the coin once.

(b) Work out the probability that she will get a 1 and a head.

.....

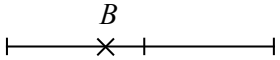
(1)
(Total 3 marks)

02. (1,2) (1,4) (1,6) (1,8)
(5,2) (5,4) (5,6) (5,8)
(7,2) (7,4) (7,6) (7,8) 2

B1 for 8 correct pairs (i.e. 7 extra)
B2 for all 12 pairs, or all 24 pairs

[2]

01. (a) B



1

B1 for B marked on line $0.25 \leq B < 0.5$

(b) (g, t), (y, h), (y, t) (b, h), (b, t) 2

B2 for 5 correct pairs (order within brackets need not be consistent, ignore pairs repeated) and no incorrect pairs
(B1 for 2 or more correct pairs, ignore any incorrect pairs)

[3]

03. (FP), FA, FB, LA, LB, LP, SA, SB, SP 2

B2 for all 9 correct allow no duplicates or extras
(B1 for 4 correct pairs i.e. (FP) and 3 more, allow duplicates as long as there are 4 correct pairs)

[2]

04. (a) (1,H), (2,H), (3,H), (4,H), (5,H), (1,T), (2,T), (3,T), (4,T), (5,T) 2

B2 for listing 10 outcomes with no extras
(B1 for listing 4 additional outcomes, ignore repeats or extras)

(b) $\frac{1}{10}$ 1

B1ft for $\frac{1}{10}$ *o.e. or 1/their total*
Accept decimals or percentages

[3]

01. In part (a) it was rather surprising that only half of the candidates could mark the probability correctly on the scale. Part (b) was generally answered well. Many candidates knew what was expected and weaker candidates were often able to gain one mark by identifying two correct pairs. Some used red as a colour and some did didn't appear to know that tails is on the opposite side of a coin to heads.

02. This was well done with most candidates scoring two marks. Those that did not tended to only give four or five extra pairs scoring no marks.

03. This question too was well answered with 80% of candidates writing down the 8 missing combinations. A few wrote all the combinations but with the order reversed and an even smaller minority wrote only two other combinations mainly L,A and S,B and one or two wrote some combinations that weren't allowed A,B or L,S etc. Even more occasionally about half a dozen in total consisted of advise on appropriate menu combinations, suggestions about which were the healthiest meals – or even the cost of each item! Only 11% of candidates scored no marks.

04. There was a variety of responses to listing all the outcomes from spinning the spinner and throwing a coin. A large number of candidates had no idea (around 18%) and many others did not realise that there were two options for the coin, namely Heads and Tails.

Many only took note of the Heads on the coin and so only added 4 more possible outcomes. Others were so used to working with dice that they added the extra (6, Head), (6, Tail). Several candidates wrote the outcomes as if they were just from spinners e.g. (1, 1) (2, 1).

Around 60% of the candidates were able to list the 10 outcomes correctly and over 28% were able to score all 3 marks. The most common error in part (b), very frequently seen, was to see an answer of 2/7 or 1/7 obtained by attempting to add the fractions 1/5 and 1/2. It was also quite common to see both the fractions 1/5 and ½ on the answer line separated by a comma. Others wrote 1/9 as they failed to include the given (1, head).