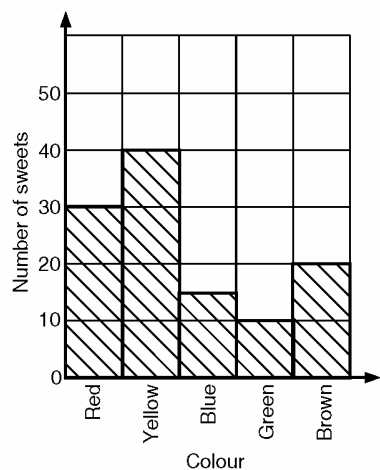


### Question 1

A box contains sweets of different colours.

The bar chart shows how many sweets of each colour are in the box.



- (a) How many red sweets are in the box?
- (b) How many blue sweets are in the box?
- (c)
  - i) Which colour sweet is most likely to be taken?
  - ii) Explain your answer to part i).

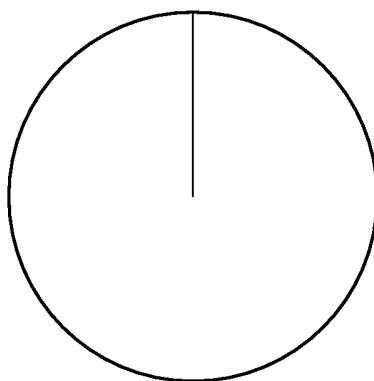
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**Question 2**

Here is a frequency table of the animals on Mr McDonald's farm

Animal	Frequency	
Hens	30	
Sheep	80	
Cows	104	
Pigs	20	
Geese	6	

- (a) Draw a fully labelled pie chart to show this data



An animal is chosen at random from Mr. McDonald's farm.

- (b) What is the probability that the animal
- i) is a pig
  - ii) is a horse
  - iii) has four legs?

---

**Question 3**

Martin bought a packet of mixed flower seeds.

The seeds produce flowers that are Red or Blue or White or Yellow.

The probability of a flower seed producing a flower of a particular colour is:

<b>Colour</b>	<b>Red</b>	<b>Blue</b>	<b>White</b>	<b>Yellow</b>
<b>Probability</b>	0.6	0.15		0.15

- (a) Write down the most common colour of a flower. **(1 mark)**

Martin chooses a flower seed at random from the packet.

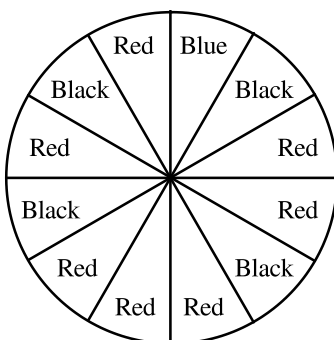
- (b) i) Work out the probability that the flower produced will be White.  
ii) Write down the probability that the flower produced will be Orange.

**(3 marks)**

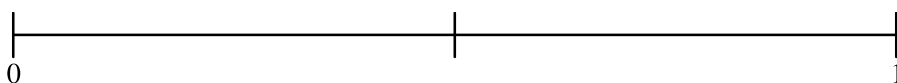
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**Question 4**

Here is a spinner.  
The spinner is spun.



- (a) i) Which colour is least likely?  
ii) Give a reason for your answer. **(2 marks)**
- (b) On the probability line, mark with an X the probability that the colour will be Red. **(1 mark)**

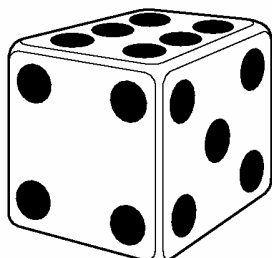


- (c) Write down the probability that the colour will be Blue. **(1 mark)**

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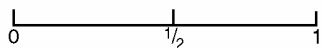
**Question 5**

Thelma rolls a normal dice with faces numbered from 1 to 6.



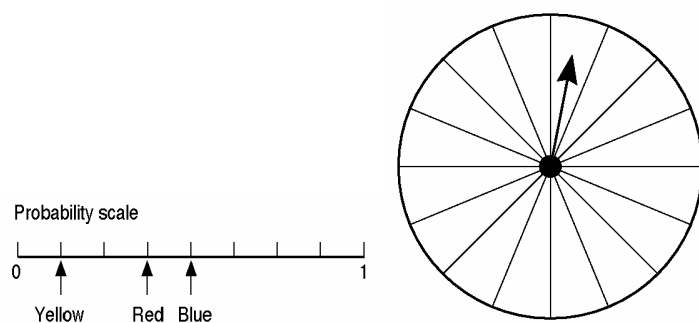
On the probability line below mark with a

- i) E the probability of scoring an even number.
- ii) T the probability of scoring a ten.
- iii) S the probability of scoring a number less than 7.



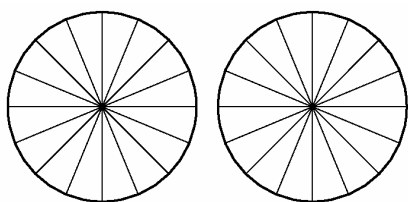
### Question 6

In a game you spin an arrow. The arrow stops on one of sixteen equal sectors of a circle. Each sector of the circle is coloured. The probability scale shows how likely it should be for the arrow to stop on any one colour.



Shade these circles to show how many sectors should be

- i)** coloured red      **ii)** coloured blue



---

**Question 7**

Peter and Asif are both taking their driving test for a motor cycle for the first time. The table below gives the probabilities that they will pass the test at their first attempt.






	Probability of passing at first attempt
Peter	0.6
Asif	0.7

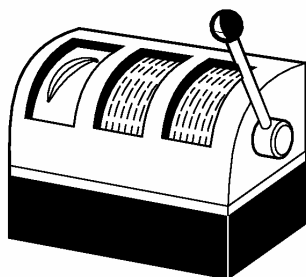
- (a) Write down the probability that Asif will pass the test at the first attempt.
- (b) Work out the probability that Peter will fail the test at the first attempt.
- (c) Explain clearly why Asif is more likely to pass the test at the first attempt than he is to fail at the first attempt.

---

**Question 8**

A game in an amusement arcade can show the following pictures.  
The fraction under each picture shows the probability of the picture being shown at the first window.

Cherry	Bar	Banana	Strawberry	Apple
				
$\frac{4}{12}$	$\frac{1}{12}$	$\frac{2}{12}$	$\frac{2}{12}$	$\frac{3}{12}$



Calculate the probability of the game **not** showing a Bar at the first window.



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**Question 9**

A fair dice is to be thrown.

**(a)** Write down the probability of the dice landing on

**i)** a six

**ii)** an even number

A second dice is to be thrown.

The probability that this dice will land on each of the numbers 1 to 6 is given in the table.

number	1	2	3	4	5	6
probability	$x$	0.2	0.1	0.3	0.1	0.2

The dice is to be thrown once.

**(b)** Calculate the value of  $x$ .

**(c)** Calculate the probability that the dice will land on a number higher than 3.

---

**Question 10**

Alison, Brenda, Claire and Donna are the only runners in a race.  
The probabilities of Alison, Brenda and Claire winning the race are shown below.

Alison	Brenda	Claire	Donna
0.31	0.28	0.24	

Work out the probability that Donna will win the race.

---

**Question 11**

A packet contains only yellow counters and green counters.

There are 8 yellow counters and 5 green counters.

A counter is to be taken from the packet at random.

- (a) Write down the probability that
- i) a yellow counter will be taken,
  - ii) a yellow counter will **not** be taken.

A second counter is to be taken from the packet.

- (b) Write down all the possible outcomes of taking two counters from the packet.

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**Question 12**

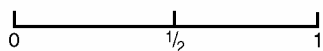
Here are the numbers of people living in the different houses in a short road.

4, 2, 3, 4, 5, 1, 3, 2

- (a) Work out the mean number of people per house.
- (b) Work out the range of the number of people living in a house.

One of the houses is to be chosen at random.

- (c) On the probability line below, mark with a letter X the probability that the house chosen will be the one with 5 people.



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**Question 13**

The table shows the bus fares paid by some pupils to travel to school.

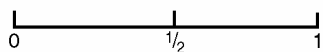
Name	Bus fare to school in pence
Neil	45
Daksha	60
Tarik	35
Sarah	35
Marc	60
Tom	35
Rob	35
Sita	40

**(a)** Write down the range of these bus fares.

One of these pupils is to be chosen at random.

**(b)** What is the most likely bus fare of the chosen pupil?

**(c)** Mark with an X on the number line below the probability that the chosen pupil pays a 40 pence bus fare.



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**Question 14**

Hemlata measured the lengths of 12 different leaves that she collected for a Science experiment. Here are her results.

15 cm, 12 cm, 9 cm, 10 cm, 9 cm, 7 cm  
14 cm, 10 cm, 8 cm, 9 cm, 12 cm, 6 cm

- (a) For the leaves Hemlata collected work out the
- i) mean
  - ii) mode
  - iii) range
  - iv) median
- (b) Write down the probability that a leaf chosen at random from Hemlata's collection has a length
- i) equal to 10 cm
  - ii) less than 10 cm.

---

**Question 15**

Shreena has a bag of 20 sweets.  
10 of the sweets are red.  
3 of the sweets are black.  
The rest of the sweets are white.  
Shreena chooses one sweet at random.

What is the probability that Shreena will choose a

(a) red sweet

**(1 mark)**

(b) white sweet?

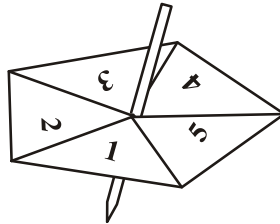
**(1 mark)**

**Question 16**

Alan throws a fair coin 600 times.

- (a) How many times would you expect him to get Heads? **(1 mark)**

Here is a 5-sided spinner.



Its sides are labelled 1, 2, 3, 4, 5.

Alan spins the spinner and throws a coin.

One possible outcome is (3, Heads).

- (b) List all the possible outcomes. **(2 marks)**

The spinner is biased.

The probability that the spinner will land on each of the numbers 1 to 4 is given in the table.

Number	1	2	3	4	5
Probability	0.36	0.1	0.25	0.15	

Alan spins the spinner once.

- (c) i) Work out the probability that the spinner will land on 5. **(2 marks)**  
 ii) Write down the probability that the spinner will land on 6. **(1 mark)**  
 iii) Write down the number that the spinner is most likely to land on. **(1 mark)**

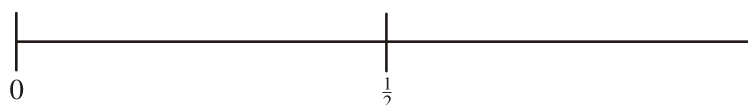
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**Question 17**

On the probability line below:

- i) mark with  $H$  the probability of getting a head when a fair coin is thrown.
- ii) mark with  $S$  the probability of getting a 7 when a fair six-sided dice is thrown.
- iii) Mark with  $N$  the probability of getting a number less than 10 when a fair six-sided dice is thrown.

**(3 marks)**

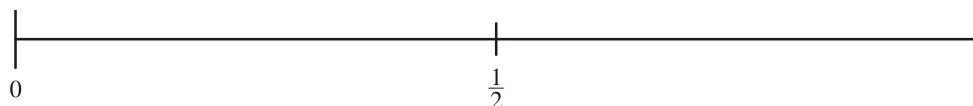


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**Question 18**

On the probability line below, mark the following probabilities.

- (i) It will snow in London in June. Use the letter  $S$ .
- (ii) The sun will rise tomorrow. Use the letter  $R$ .
- (iii) A fair coin when tossed will come down heads. Use the letter  $H$ .
- (iv) A fair dice when rolled will show a five. Use the letter  $F$ .



**(4 marks)**

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**Question 19**

A bag contains coloured beads.

A bead is selected at random.

The probability of choosing a red bead is  $\frac{5}{8}$ .

Write down the probability of choosing a bead that is **not** red from the bag.

**(1 mark)**

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**Question 20**

Chris is going to roll a biased dice.

The probability that he will get a six is 0.09.

**(a)** Work out the probability that he will **not** get a six.

**(1 mark)**

Chris is going to roll the dice 30 times.

**(b)** Work out an estimate for the number of sixes he will get.

**(2 marks)**