

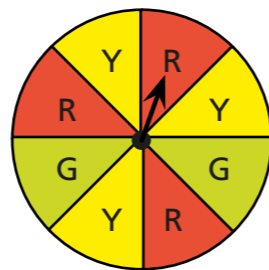
# Calculate the probability of a single event

1 A fair six-sided dice is rolled.  
What are the probabilities of the events?



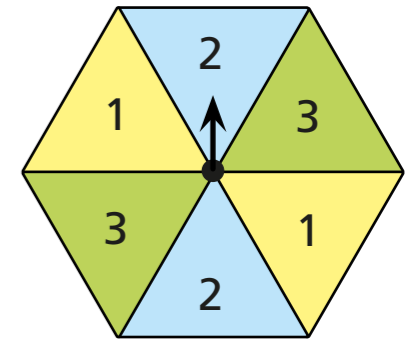
- |                          |               |                                 |               |
|--------------------------|---------------|---------------------------------|---------------|
| a) rolling the number 5  | $\frac{1}{6}$ | d) rolling a number less than 5 | $\frac{2}{3}$ |
| b) rolling the number 6  | $\frac{1}{6}$ | e) rolling the number 7         | 0             |
| c) rolling an odd number | $\frac{1}{2}$ | f) rolling a square number      | $\frac{1}{3}$ |

2 Amir spins the spinner.  
Each section is equally likely to be landed upon.  
Find the probabilities.



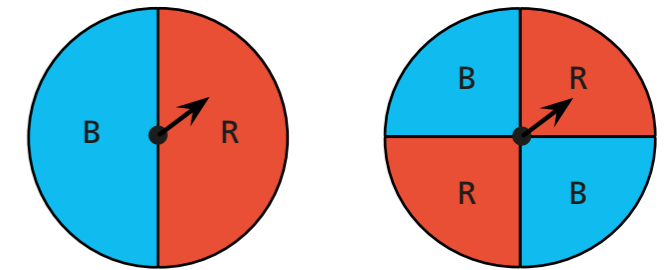
- |                             |               |
|-----------------------------|---------------|
| a) landing on red           | $\frac{3}{8}$ |
| b) landing on green         | $\frac{1}{4}$ |
| c) landing on red or yellow | $\frac{3}{4}$ |
| d) landing on blue          | 0             |

3 Here is a numbered spinner.  
Work out the probabilities.



- |                                     |               |
|-------------------------------------|---------------|
| a) P(spinning a 1)                  | $\frac{1}{3}$ |
| b) P(spinning an odd number)        | $\frac{2}{3}$ |
| c) P(spinning a number less than 4) | 1             |

4 a) Here are two spinners.



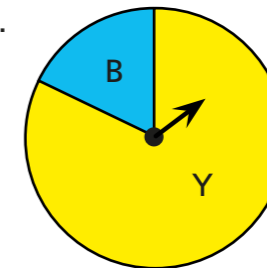
The probability of spinning blue on each of these spinners is equal.

Is the statement true or false? true

Explain your reasons.

$\frac{2}{4}$  is equal to  $\frac{1}{2}$

b) Here is another spinner.



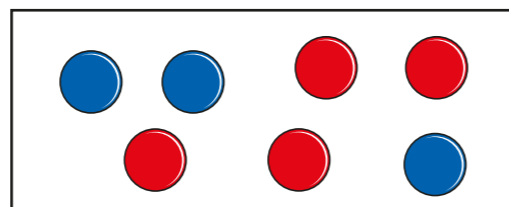
The probability of the spinner landing on yellow is 50%.

Is the statement true or false? false

Explain your reasons.

Over half of the spinner is yellow.

- 5 A box contains some coloured counters.  
4 counters are red and 3 are blue.  
A counter is selected at random.



Work out the probability that the counter is red.

$$\frac{4}{7}$$

- 6 A box of chocolates contains 4 mint, 3 strawberry and 2 toffee chocolates.  
Annie selects a chocolate from the box at random.  
Find the probability that the chocolate selected is:

a) mint

$$\frac{4}{9}$$

b) mint or strawberry

$$\frac{7}{9}$$

c) not strawberry

$$\frac{2}{3}$$



- 7 A cupboard contains a box of whiteboard pens.  
4 of the pens are black, 3 are green, 2 are yellow and 1 is red.  
A pen is selected at random.  
Find the probability that the pen is:

a) red

$$\frac{1}{10}$$

b) green or yellow

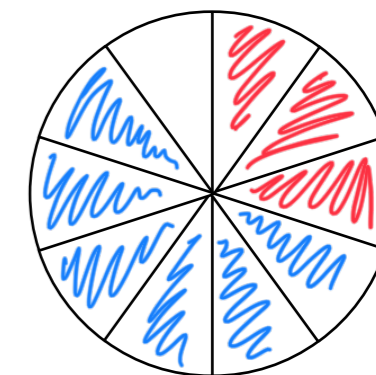
$$\frac{1}{2}$$

c) not green

$$\frac{7}{10}$$

- 8 A spinner has ten sections.  
Colour the spinner so that:

- the probability of spinning red is  $\frac{3}{10}$
- the probability of spinning blue is 60%.



- 9 The table shows the number of students in each year group at a school.

Year group	Year 7	Year 8	Year 9	Year 10	Year 11
Probability	120	150	175	165	120

A student is selected at random.

Find the probability that the student will be:

a) from Year 7

$$\frac{120}{730}$$

c) not from Year 8

$$\frac{580}{730}$$

b) from Year 10 or Year 11

$$\frac{285}{730}$$

- 10 A charity is running a raffle.

The charity sells 250 red tickets numbered 1 to 250

- The charity sells 170 green tickets numbered 1 to 170

A ticket is chosen at random to win a holiday.

Find the probability that the ticket selected will be:

a) green

$$\frac{170}{420}$$

c) numbered 201

$$\frac{1}{420}$$

b) numbered 100

$$\frac{2}{420}$$

d) numbered 263

$$0$$