GCSE FOUNDATION · REVISION MAT 5

# Probability scale and theoretical probability

**1** Write down the word that best describes the probability of each event.

impossible · unlikely · even chance · likely · certain

(a) you roll a number greater than 1 on a dice

(b) you pick a blue ball from a bag of only red balls

(c) a baby born today is a girl

**2** A bag contains these counters.




A counter is taken at random.

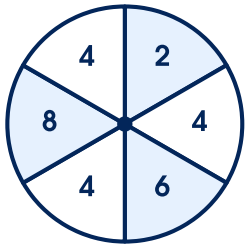
Work out the probability that it is green.

**3** Nia says,

"The probability of getting a 1 with a 10-sided spinner is $\frac{1}{10}$, so if I try 10 times I will get exactly one 1."

Explain why Nia is wrong.

**4** Here is a fair spinner.




Show that the probability of landing on 4 is $\frac{1}{2}$.

**5** A bag contains 5 red and 9 blue counters.

How many red counters must be added so that the probability of taking a red counter is $\frac{2}{5}$?

**6** Cards are numbered 1 to 30. A card is taken at random.

(a) Work out P(prime number).

(b) Work out P(multiple of 6 **and** multiple of 4).

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**1** (a) **likely**
(b) **impossible**
(c) **even chance**

**2** 3 out of 12

$\frac{1}{4}$

**3** Probability tells you what is likely in the long run, not exactly what will happen.

You might get no 1s, or more than one.

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**4** 3 of the 6 equal sections show 4.

$\frac{3}{6} = \frac{1}{2}$ ✓

**5** After adding $x$ red: $\frac{5 + x}{14 + x} = \frac{2}{5}$

$x = 1$

Check: $\frac{6}{15} = \frac{2}{5}$ ✓

**6** (a) Primes: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29

$\frac{1}{3}$

(b) 12, 24: $\frac{1}{15}$

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