4 Basic probability – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	**Write it 3 times** (English)
Probability	

Recall

You have a sense of chance already:

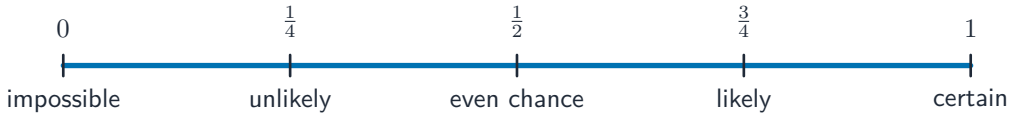
- A coin lands heads about half the time.
- A rolled die is equally likely to show 1 to 6.
- Some events are more likely than others.

This sheet lines up the basics of probability. Each idea has a worked example.

New ideas

1 The probability scale

Probability measures how likely an event is, from 0 (impossible) to 1 (certain).



2 Equally likely outcomes

When outcomes are equally likely,

$$P(\text{event}) = \frac{\text{favourable outcomes}}{\text{total outcomes}}.$$

Worked example. Rolling a 4 on a die: $P = \frac{1}{6}$. Rolling an even number: $P = \frac{3}{6} = \frac{1}{2}$.

■ 3 Complement

The chance an event does **not** happen is 1 minus the chance it does: $P(\text{not } A) = 1 - P(A)$.

Worked example. If $P(\text{rain}) = 0.3$, then $P(\text{no rain}) = 1 - 0.3 = 0.7$.

■ 4 Combining events

For two independent events (one does not affect the other), the chance **both** happen is the product of their chances.

Watch out: a probability is always between 0 and 1 (or 0% and 100%). An answer above 1 or below 0 is a sure sign of a mistake.

Practice

Try these in order. The methods are all above.

2.1 State what a probability of 0 and of 1 each mean. [2]

2.2 A die is rolled. Find the probability of rolling a 5. [2]

2.3 Find the probability of rolling an odd number on a die. [2]

2.4 If $P(\text{win}) = 0.4$, find $P(\text{not win})$. [2]

2.5 State the range that any probability must lie in. [1]