

Have a go at these arithmetic calculations.

$$1. \quad \frac{3}{8} + \frac{3}{8} + \frac{3}{8} =$$

$$2. \quad 1 \frac{1}{4} - \frac{2}{5} =$$

$$3. \quad 27 \times 62 =$$

$$4. \quad 1320 \div 11 =$$

Complete as many of these as you can in 3 minutes:

1 $6^2 + 9^2 =$

1 mark

3. Write down the numbers which are **common multiples** of 3 and 8.

32 24 800 96 30

2 $567 - 3.9 =$

1 mark



Lesson 6

Learning Question:

Can I understand and explain the concept of probability?

Success Criteria:

- Understand the terms probability and likelihood
- Decide where certain events should be on the probability scale
- Calculate simple probabilities
- Express probability as a fraction, decimal or percentage

Vocabulary

Probability

Chance

Likelihood

Likely

Unlikely

Low

High

Fraction

Decimal

Percentage

Certain

Even chance

Impossible

Probability scale



Personal Target: What are you going to focus on today?

What is probability?

The **probability** of something happening means how **likely** it is to happen or the **chance** of it happening.

Probability can be shown in **fraction** or **decimal** or **percentage** form.

What is probability?

- Probability or chance is **how likely** something is to happen:
- If something has a **low** probability, it is **unlikely** to happen.
- If something has a **high** probability, it is **likely** to happen.

The Language of Probability

Certain



1



The sun rising tomorrow

Very likely

Even chance



$\frac{1}{2}$



Getting 'tails' when you toss a coin

Not likely



$\frac{1}{6}$



Rolling a 6 on a dice

Impossible

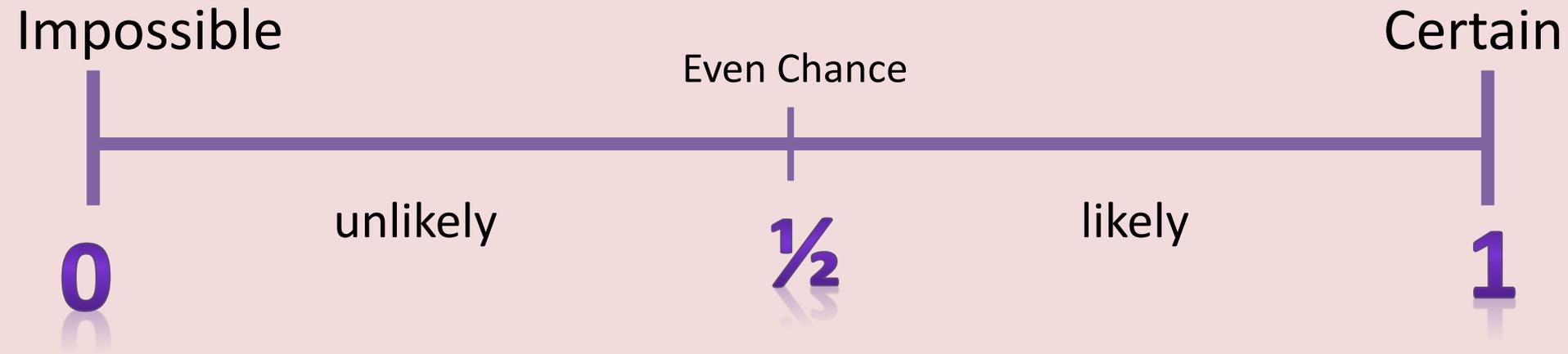


0



Rolling an 8 on a dice

The probability scale.



How do we calculate probability?

Number of ways it can
happen

$$\text{Probability} = \frac{\text{Total number of outcomes}}{\text{Total number of outcomes}}$$

Flipping a coin

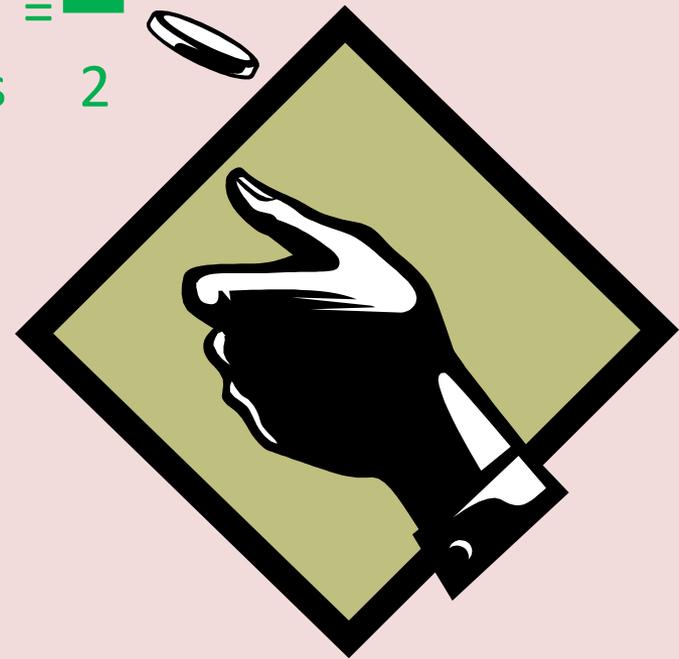
If you flip a regular 2p coin, what is the probability of it landing on;

a) Heads

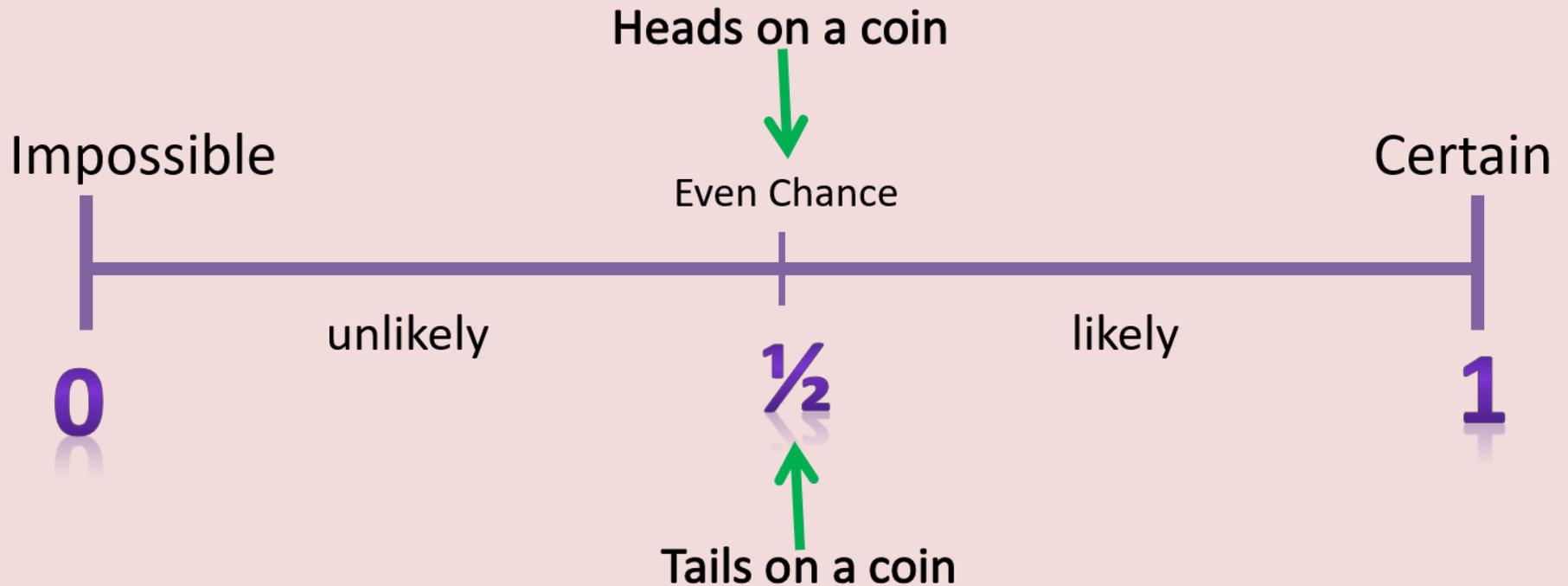
$$\text{Probability} = \frac{\text{Chance of event occurring}}{\text{Total number of outcomes}} = \frac{1}{2}$$

b) Tails

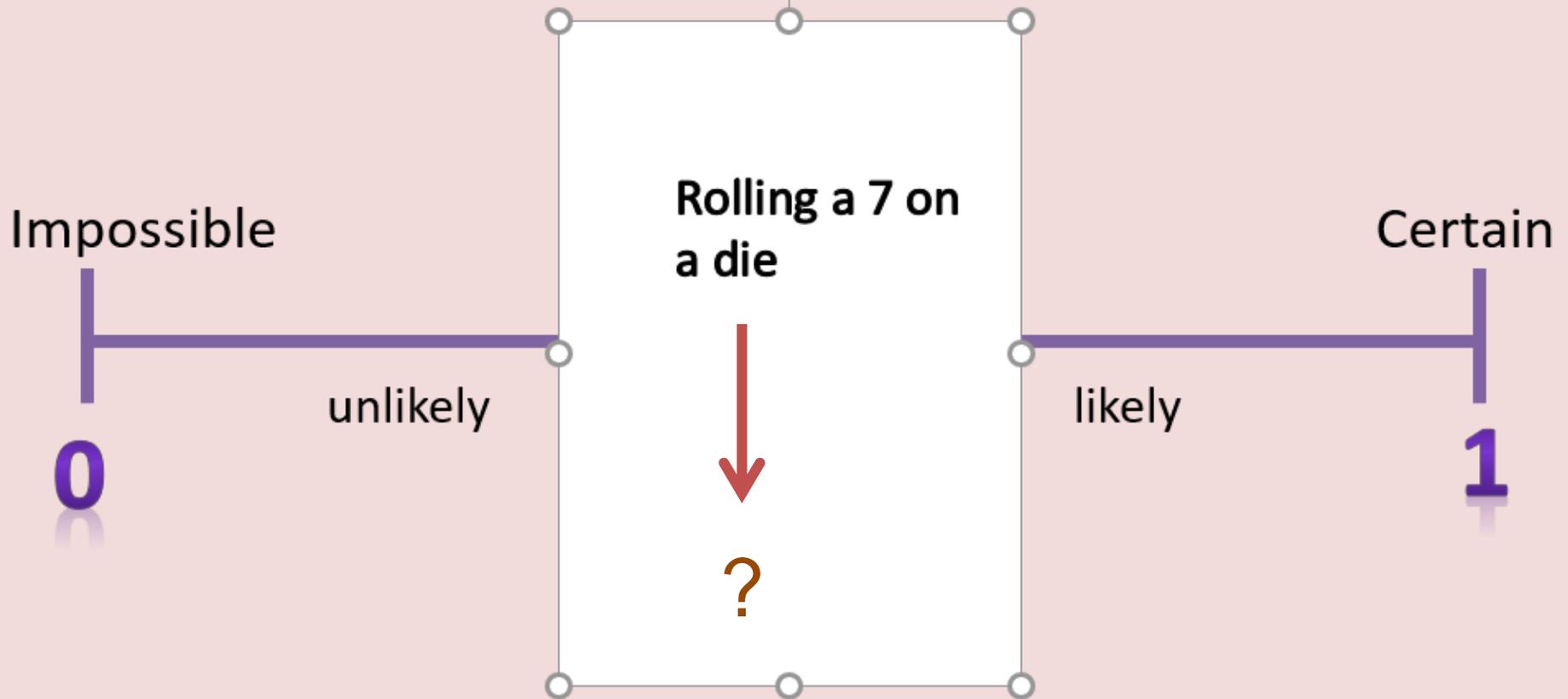
$$\text{Probability} = \frac{\text{Chance of event occurring}}{\text{Total number of outcomes}} = \frac{1}{2}$$



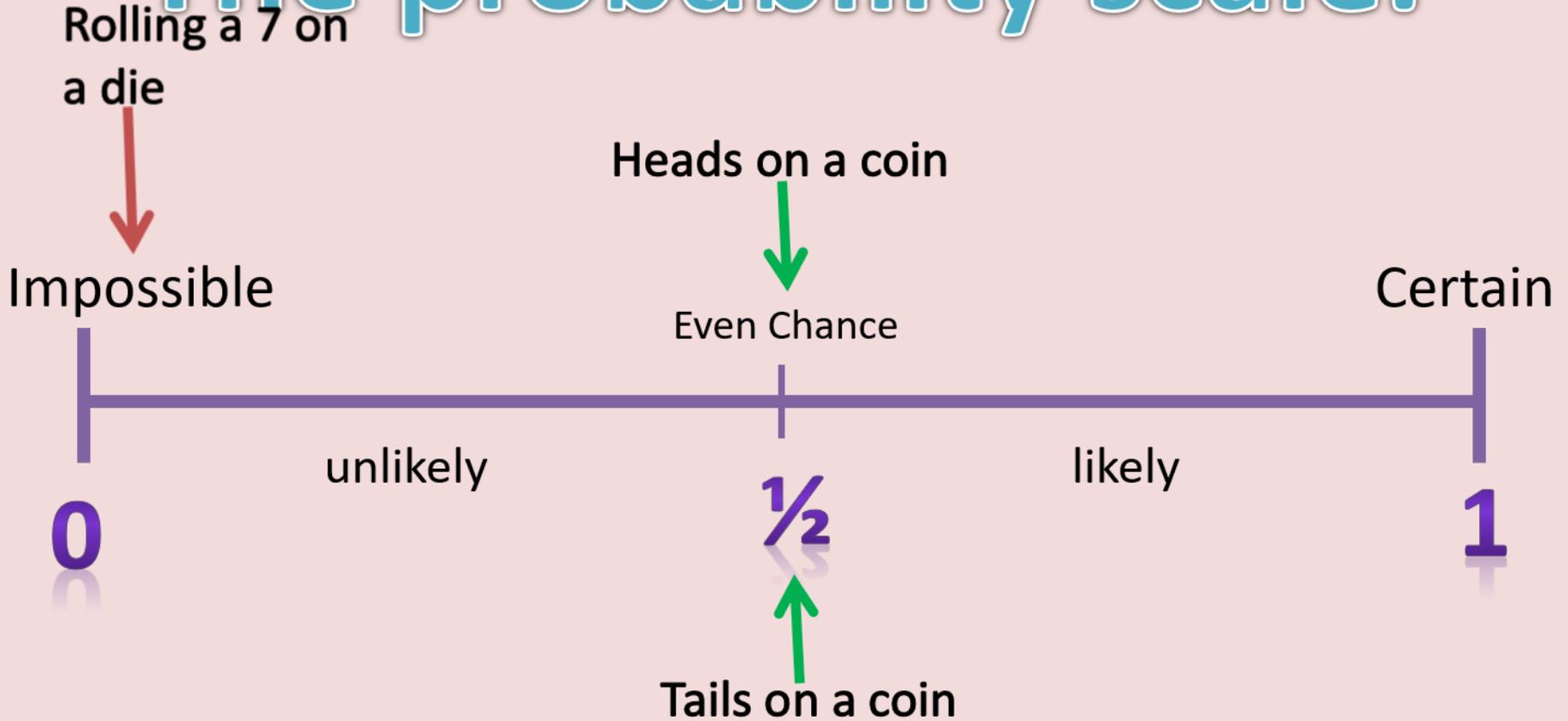
The probability scale.



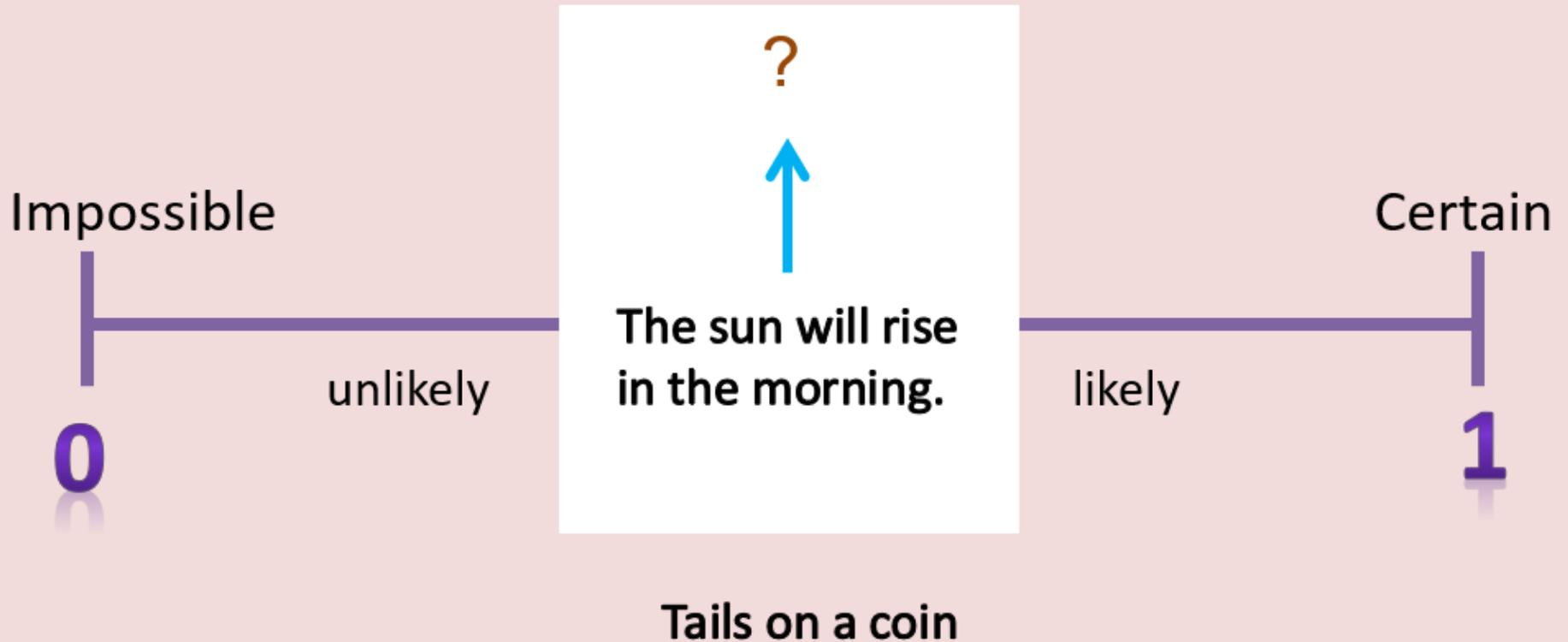
The probability scale.



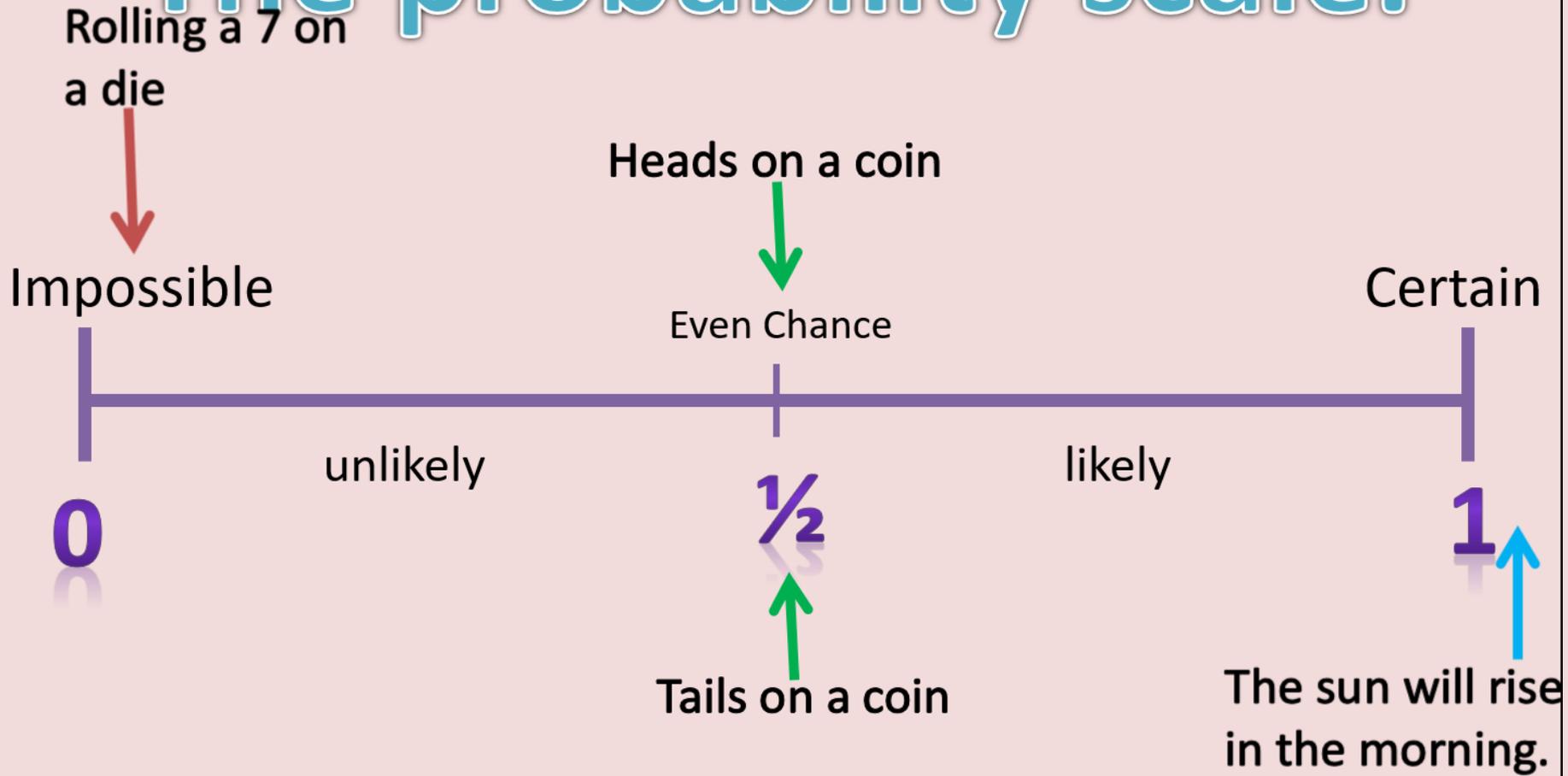
The probability scale.



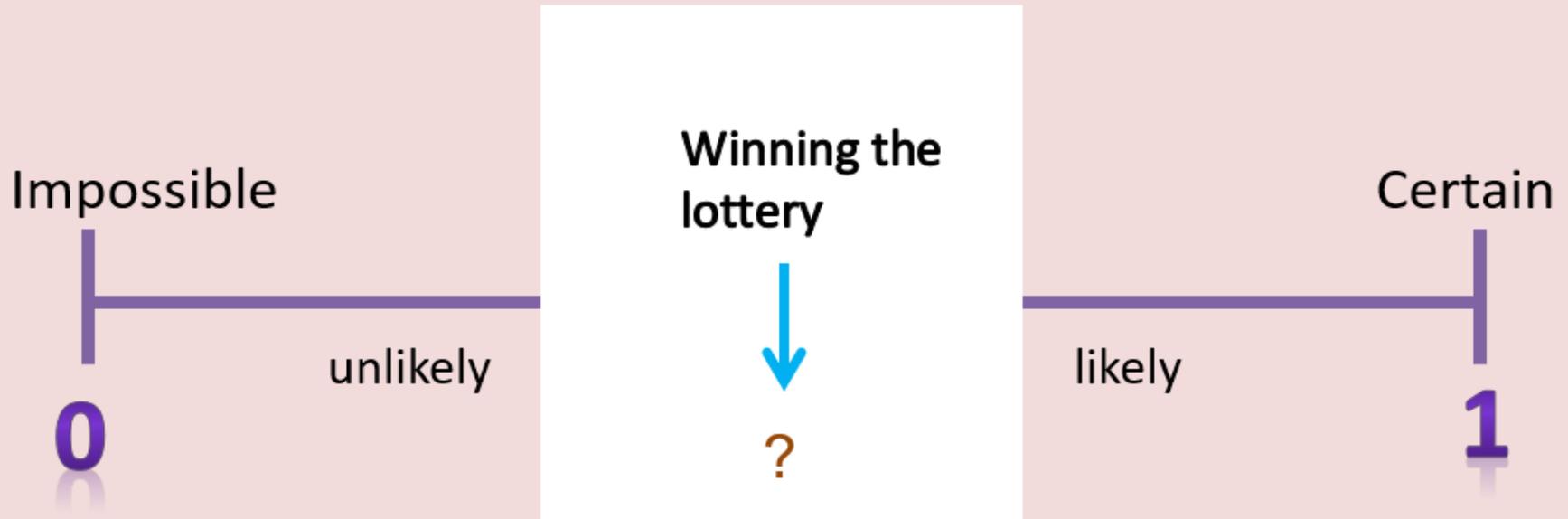
The probability scale.



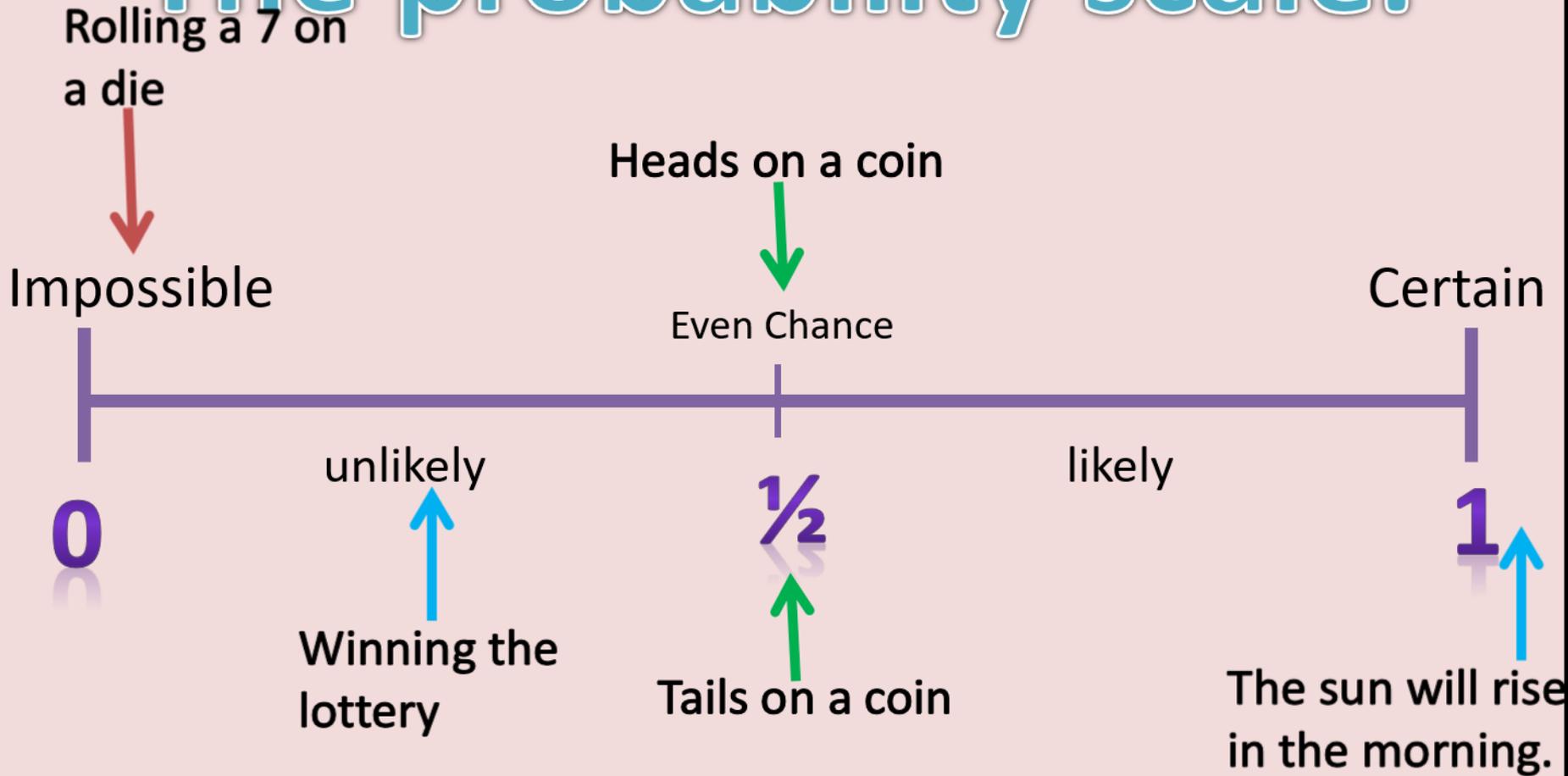
The probability scale.



The probability scale.



The probability scale.



How to Express Probability

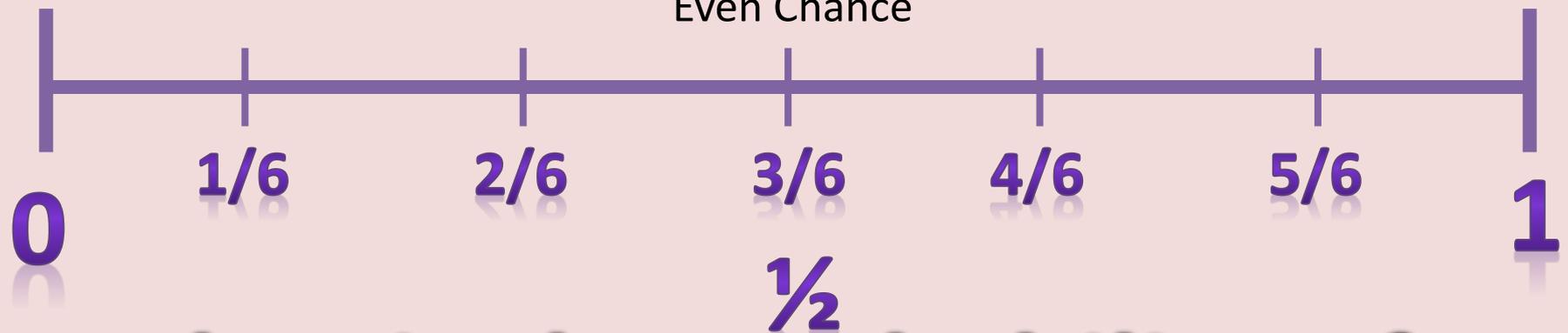
- Probabilities are most commonly shown as **fractions**:
 - The probability of getting 'tails' when you toss a coin is a 1 in 2 chance, or $\frac{1}{2}$
 - The probability of getting a 3 when you roll a dice is a 1 in 6 chance, or $\frac{1}{6}$



Rolling Dice

Impossible

Certain



What is the probability of...

A –Rolling a 6

B –Rolling an even number

C –Rolling a number less than 5

What is the probability as a fraction?

1. What is the probability of rolling a 4 with a dice?
2. What is the probability of rolling an odd number with a dice?
3. A bag contains 7 buttons. 3 of them are green. What is the probability of picking a green button from the bag?
4. A bag contains 3 red and 5 green marbles. What is the probability of picking a red.

What is the probability as a fraction?

1. What is the probability of rolling a 4 with a dice? – $\frac{1}{6}$
2. What is the probability of rolling an odd number with a dice? – $\frac{3}{6}$ or $\frac{1}{2}$
3. A bag contains 7 buttons. 3 of them are green. What is the probability of picking a green button from the bag? – $\frac{3}{7}$
4. A bag contains 3 red and 5 green marbles. What is the probability of picking a red. – $\frac{3}{8}$

How to Express Probability

- Probabilities can also be shown as **decimals** or **percentages**:
 - The probability of getting 'tails' when you toss a coin is a 1 in 2 chance, or $\frac{1}{2}$ or 0.5 or 50%
 - A probability of $\frac{3}{4}$ can also be shown as 0.75 or 75%

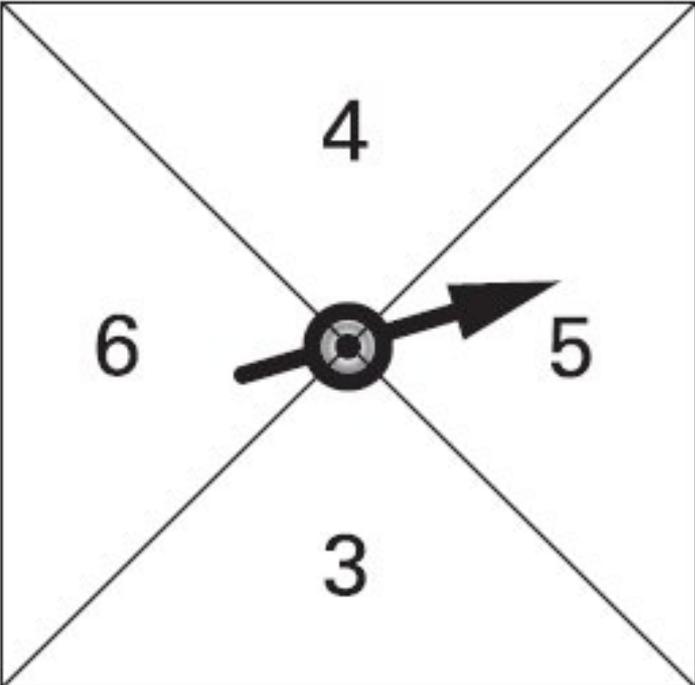
What is the probability?

1. What is the probability, *as a decimal*, of getting 'heads' when you toss a coin?
2. Something that has an even chance of happening has a probability of what percentage?
3. A bag contains just 5 buttons, all of which are blue. What is the probability of picking a red button from the bag?
4. A bag contains 4 white buttons. How many black buttons must be added so there is an even chance of picking a white button?

What is the probability?

1. What is the probability, *as a decimal*, of getting 'heads' when you toss a coin? **0.5**
2. Something that has an even chance of happening has a probability of what percentage? **50%**
3. A bag contains just 5 buttons, all of which are blue. What is the probability of picking a red button from the bag? **0**
4. A bag contains 4 white buttons. How many black buttons must be added so there is an even chance of picking a white button? **4**

Geeta has this spinner.



What is her chance of spinning the numbers in the boxes below?
Match each box to the correct word.

One has been done for you.

Handwritten mark

an odd number

2

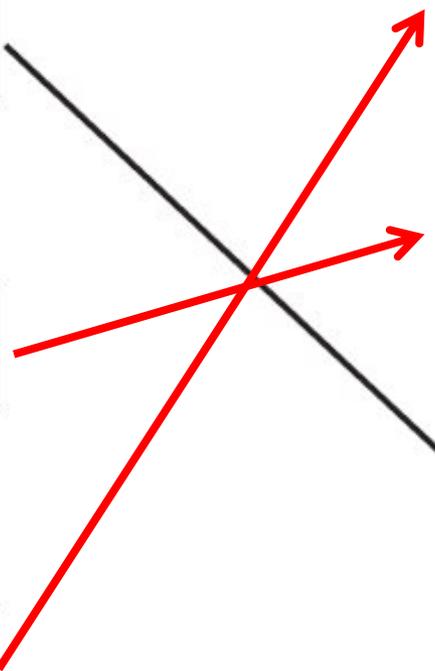
**a number
less than 10**

certain

impossible

even chance

likely

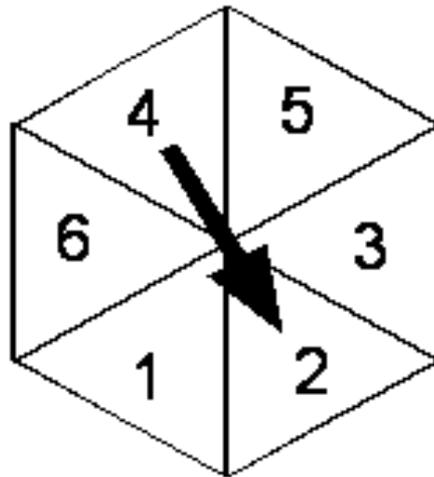


Your task:

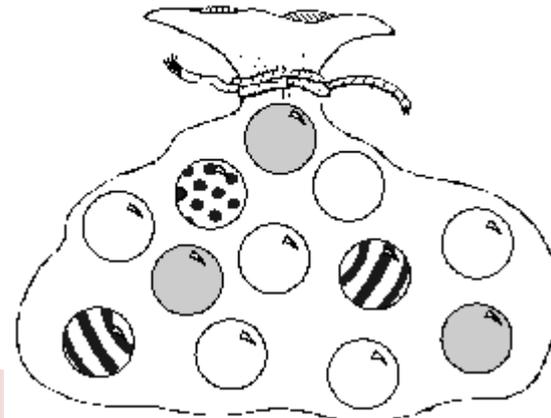
Complete the worksheet on probability.

Plenary:

You can spin any number from 1 to 6 on this spinner.



Write a number that is **impossible** to spin.



Key	
	striped
	spotty
	white
	grey

These marbles are hidden in a bag. The bag is shaken.

Pete pulls out one marble without looking.

- Which kind of marble is Pete most likely to pull out?
- Explain how you know.