

### Essential knowledge

Know the meaning of certain, impossible, likely, unlikely and even. Know that probability lie between 0 and 1. Know that probability can be expressed as a fraction, decimal or percentage. Know and define intersection and union.

### Key Vocabulary

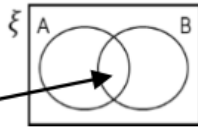
Set: collection of things  
 Intersection: the overlapping part of a Venn diagram (AND  $\cap$ )  
 Union: two ellipses that join (OR  $\cup$ )  
 Mutually Exclusive: events that do not occur at the same time  
 Probability: likelihood of an event happening  
 Bias: a built-in error that makes all values wrong .  
 Random: something happens by chance and is unable to be predicted

### Prior learning links

Know how to convert between Fraction, decimal and percentage. Know the meaning of frequency.

### Interpret and create Venn diagrams

A Venn diagram is usually when two sets have elements in common. The elements in common go in the overlapping section



### Identify and represent sets.

The universal set has this symbol  $\xi$  – this means EVERYTHING in the Venn diagram is in this set. A set is a collection of things – you write sets inside curly brackets { }

$A = \{\text{Square numbers}\}$   
 $A = \{1, 4, 9, 16, 25, 36, 49\}$

### Probability of a single event

Probability =  $\frac{\text{number of times event happens}}{\text{total number of possible outcomes}}$

Probability can be a fraction, decimal or percentage value.

Probability is always a value between 0 and 1.

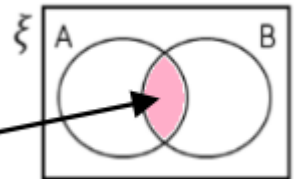


$$P(\text{Blue}) = \frac{4}{10}$$

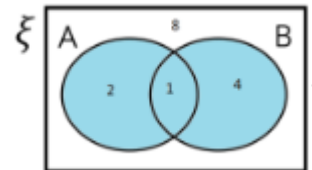
There are four blue sectors and 10 sectors altogether

### Union and Intersection

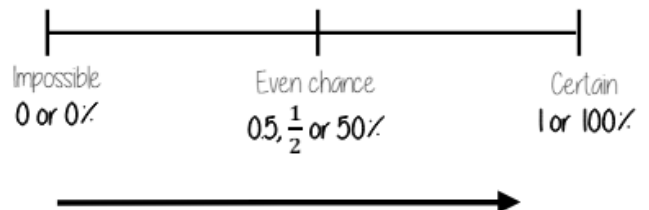
Elements in the intersection are in set A AND set B The notation for this is  $A \cap B$



Elements in the union could be in set A OR set B. The notation for this is  $A \cup B$



### The probability scale



The more likely an event the further up the probability it will be in comparison to another event

### Essential knowledge

Write a event that fit the words below:

- Certain
- Impossible
- Likely
- Unlikely

### Key Vocabulary

Write a definition for the following words.

- Set:
- Intersection:
- Union:
- Mutually Exclusive:
- Probability:
- Bias:
- Random:

### Prior learning links

Convert the following :

- $\frac{1}{4}$  to decimal:
- 0.75 to fraction:
- 60% as a fraction:

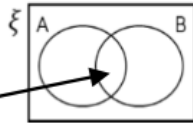
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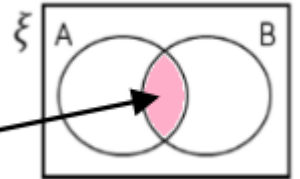
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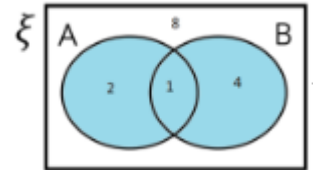


### Union and Intersection

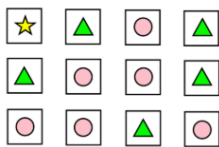
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### Probability of a single event



Leah has 12 cards, each with a shape on it. She takes a card at random.

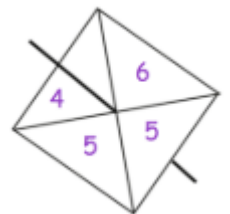
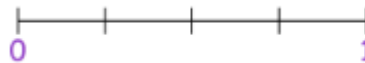
- (a) What is the probability that Leah takes a card with a star on it?
- (b) What is the probability that Leah takes a card with a triangle on it?
- (c) What is the probability that Leah takes a card with a circle on it?

1 2 3 4 5 6 7 8 9

Ralph has 9 cards, each with a number on it He picks a card at random. Write down the probability that the chosen card is

- (a) a square number (b) a prime number

### The probability scale



- 1) Mark with an A the probability of getting a 4.
- 2) Mark with a B the probability of getting a 5 OR 6.