

### Key Language

1	<b>Relative Frequency</b>	How often something happens divided by all outcomes
2	<b>Experimental data</b>	Results from an experiment
3	<b>Sample size</b>	How many times an experiment is run
4	<b>Theoretical probability</b>	Probability based on logic
5	<b>Experimental probability</b>	Probability based on results from an experiment
6	<b>Bearings</b>	An angle measured with 0° facing North, given as 3-figures
7	<b>Interior angles</b>	Angles inside a shape
8	<b>Exterior angles</b>	Angles outside a shape, formed by continuing the sides in a straight line
9	<b>Hypotenuse</b>	The longest side in a triangle
10	<b>Adjacent</b>	The side that runs 'alongside' the two angles given
11	<b>Opposite</b>	The side opposite a given angle (other than the right angle)
12	<b>Sin</b>	Opposite divided by the Hypotenuse
13	<b>Cos</b>	Adjacent divided by the Hypotenuse
14	<b>Tan</b>	Opposite divided by the Adjacent
15	<b><math>\sin^{-1}</math>, <math>\cos^{-1}</math>, <math>\tan^{-1}</math></b>	Inverse of sin, cos and tan. Used to find angles.

### Formulae to Learn

$$\text{Relative frequency} = \frac{\text{number of successful trials}}{\text{total number of trials}}$$

$$\text{Exterior angle} + \text{Interior angle} = 180^\circ$$

$$\text{Sum of interior angles} = 180(n - 2), \text{ where } n \text{ is the number of sides}$$

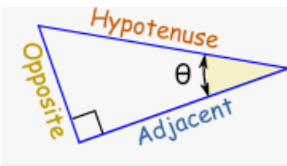
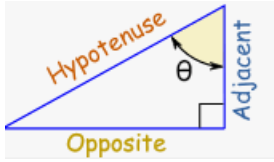
$$\text{Exterior angle of a regular polygon} = \frac{360}{n}, \text{ where } n \text{ is the number of sides}$$



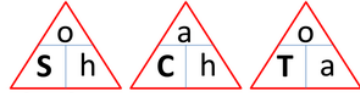
Know

## More to Learn

Labelling sides:



Trigonometry:



You need to know two sides...

If you know o and h

If you know a and h

If you know o and a

$$\sin \theta = \frac{o}{h}$$

$$\cos \theta = \frac{a}{h}$$

$$\tan \theta = \frac{o}{a}$$

$$\theta = \sin^{-1}\left(\frac{o}{h}\right)$$

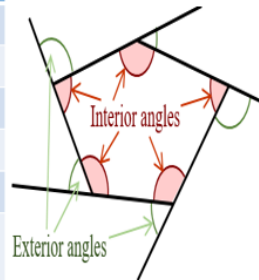
$$\theta = \cos^{-1}\left(\frac{a}{h}\right)$$

$$\theta = \tan^{-1}\left(\frac{o}{a}\right)$$

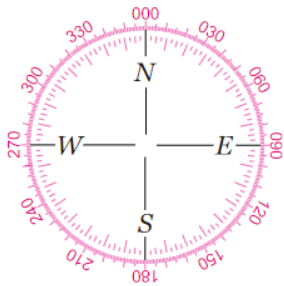
## Notes Section:

### Interior and Exterior Angles of Polygons

Polygon	Sides	Sum of Interior Angles	Each interior angle of regular polygon	Sum of Exterior Angles
Triangle	3	180°	60°	360°
Quadrilateral	4	360°	90°	360°
Pentagon	5	540°	108°	360°
Hexagon	6	720°	120°	360°
...				
Any Polygon	$n$	$(n-2) \times 180^\circ$	$\frac{(n-2) \times 180^\circ}{n}$	360°



Bearings:



## ORDER OF OPERATIONS

**G**

GROUPING SYMBOLS

$() \{ []$

**E**

EXPONENTS

$3^2 \quad x^2 \quad 10^5$

**M**

MULTIPLICATION **OR** DIVISION

GO FROM LEFT TO RIGHT

**S**

SUBTRACTION **OR** ADDITION

GO FROM LEFT TO RIGHT

Know

## PRACTICE QUESTIONS

1. What is calculated by dividing how often something happens by all outcomes?
2. What do we call results from an experiment?
3. What tells us how many times an experiment is run?
4. What type of probability is worked out using logic?
5. What type of probability uses data from experiments/tests?
6. What angles are measured with  $0^\circ$  facing North?
7. How many figures do we give with a bearing?
8. What do we call the angles inside a shape?
9. What do we call angles made by extending a side outside the shape?
10. What is the formula for the sum of interior angles in a polygon?
11. What do exterior angles add up to?
12. What do angles in a pentagon add up to?
13. What side is the hypotenuse in a triangle?
14. What side is alongside the two given angles?
15. Which ratio is Adjacent divided by the Hypotenuse?
16. Which ratio is Opposite divided by Adjacent?
17. Which ratio is Opposite divided by Hypotenuse?
18. What is the inverse of tan?
19. What is the 3-figure bearing for East?
20. What is the sum of interior angles of a hexagon?

## ANSWERS

- |                       |                 |
|-----------------------|-----------------|
| 1. Relative Frequency | 11. $360^\circ$ |
| 2. Experimental Data  | 12. $540^\circ$ |
| 3. Sample Size        | 13. Longest     |
| 4. Theoretical        | 14. Adjacent    |
| 5. Experimental       | 15. Cos         |
| 6. Bearings           | 16. Tan         |
| 7. 3                  | 17. Sin         |
| 8. Interior           | 18. $\tan^{-1}$ |
| 9. Exterior           | 19. 090         |
| 10. $180(n-2)$        | 20. $720^\circ$ |



Do