

# Maths Knowledge Organiser

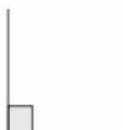
## YEAR 7 – PART 5

### Key Language

1	<b>Percentage</b>	a rate, number, or amount in each hundred.
2	<b>Percent</b>	means per 100
3	<b>Fraction</b>	a numerical quantity that is not a whole number
4	<b>Original</b>	present or existing from the beginning; the first or earliest.
5	<b>Place Value</b>	the numerical value that a digit has because of its position in a number.
6	<b>Decimal</b>	a system of numbers and arithmetic based on the number ten, tenth parts, and powers of
7	<b>Line</b>	a collection of points that go on forever on both directions.
8	<b>Line Segment</b>	part of a line that has two endpoints.
9	<b>Angle</b>	formed when two lines intersect (cross)
10	<b>Vertex</b>	a corner or point where two lines meet.
11	<b>Parallel lines</b>	lines that will never meet 
12	<b>Perpendicular lines</b>	lines that intersect at $90^\circ$ . 
13	<b>Scalene triangle</b>	no sides or angles are the same
14	<b>Right angled triangle</b>	contains a $90^\circ$ angle.
15	<b>Isosceles triangle</b>	two sides the same length and two angles the same
16	<b>Equilateral triangle</b>	all sides the same length and all angles the same size.
17	<b>Acute angle</b>	less than $90^\circ$ .
18	<b>Obtuse angle</b>	greater than $90^\circ$ but less than $180^\circ$ .
19	<b>Reflex angle</b>	greater than $180^\circ$ but less than $360^\circ$ .



Acute



Right



Obtuse



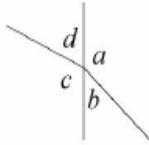
Reflex



More Useful Knowledge  
Angle facts

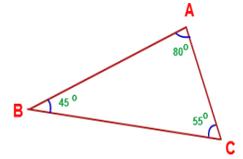


Angles around a **point** add up to  $360^\circ$ .

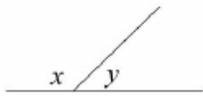


$$a + b + c + d = 360^\circ$$

Angles in a **triangle** add up to  $180^\circ$ .

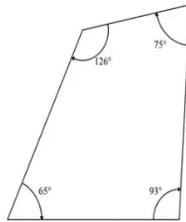
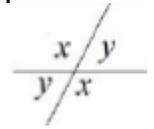


Angles on a **straight line** add up to  $180^\circ$ .



$$x + y = 180^\circ$$

**Vertically opposite** angles are equal.

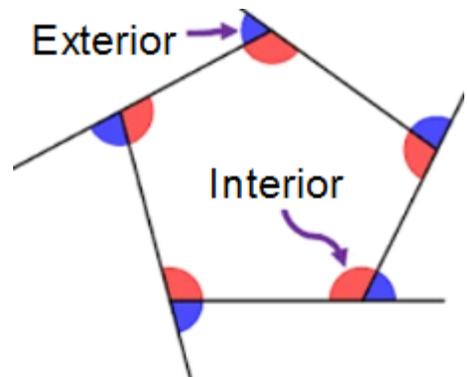


Angles in a **quadrilateral** add up to  $360^\circ$ .

Polygons

- 3 sides    Triangle
- 4 sides    Quadrilateral
- 5 sides    Pentagon
- 6 sides    Hexagon
- 7 sides    Heptagon
- 8 sides    Octagon
- 9 sides    Nonagon
- 10 sides    Decagon

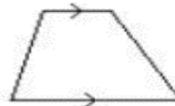
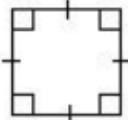
**Regular** polygons – all sides and interior angles are the same.  
**Irregular** polygons – sides and angles can be different sizes.



Know

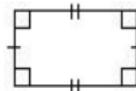
Quadrilaterals

**Square** – all sides the same, all angles are  $90^\circ$ . Two pairs of opposite sides are parallel.



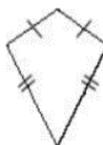
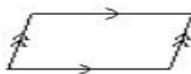
**Trapezium** – One pair of equal, parallel sides.

**Rectangle** – two pair of equal parallel sides. All angles are  $90^\circ$ .



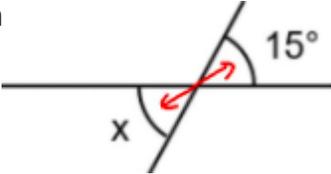
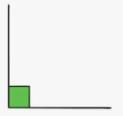
**Rhombus** – four sides equal. Two pairs of parallel sides. Two pairs of opposite equal angles.

**Parallelogram** – Opposite sides are equal and parallel, Opposite angles are equal

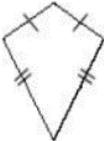


**Kite** – Adjacent sides are equal size. One pair of equal opposite angles.



1. Which quadrilateral has only one pair of parallel sides?
2. What is the name of a ten sided shape?
3. How many sides does a heptagon have?
4. What do the angles on a straight line add to?
5. Describe a reflex angle.
6. Describe an obtuse angle.
7. Are these lines parallel or perpendicular? 
8. What is a line segment?
9. What does percent mean?
10. What is a vertex?
11. Describe an isosceles triangle,
12. Describe a scalene triangle.
13. What is the name of a triangle where all the sides are the same?
14. Describe a regular polygon.
15. What is a polygon called if it is not a regular polygon
16. What do the angles in a quadrilateral add to?
17. What is the value of the angle marked x? 
18. Which quadrilaterals have four equal sides?
19. Which quadrilaterals have 2 pairs of parallel sides?
20. Draw a kite and mark on any equal sides.
21. What do we call a collection of points that go on forever?
22. What does find the original value mean?
23. How many interior angles would a pentagon have?
24. Draw a hexagon.
25. What type of angle is this?  

ANSWERS

1. Trapezium
2. Decagon
3. 7
4.  $180^\circ$
5. Greater than  $180^\circ$  but less than  $360^\circ$ .
6. Greater than  $90^\circ$  but less than  $180^\circ$ .
7. Perpendicular.
8. part of a line that has two endpoints.
9. Per 100
10. a corner or point where two lines meet.
11. Two equal sides and two equal angles.
12. All three sides different lengths and all three angles are different.
13. Equilateral
14. All the sides and interior angles are the same.
15. Irregular
16.  $360^\circ$ .
17.  $15^\circ$ .
18. Square and Rhombus
19. Square, Rhombus, Parallelogram and Rectangle.
20. 
21. Line
22. The value that existing from the beginning; the first or earliest.
23. 5
24. Draw any 6 sided shape
25. Right angle