Chapter 9 Geometry 1 Triangle and Quadrilaterals

1. I know that that a **right angle is 90°,** a **straight line angle is 180°,** an **acute angle is between 0° and 90°**, an **obtuse angle between 90° and 180°** and a r**eflex angle is between 180° and 360°**.
2. I know that the **sum of angles on a straight line add to 180°, the sum of angle meeting at a point add to 360°** and that **vertically opposite angles formed when 2 straight lines cross at a point are equal.**
3. I know that angles formed when a **straight line crosses a pair of parallel lines** have the following properties: **corresponding angles are equal**, **alternate angles are equ**al and that the **sum of interior angles adds up to 180°.**
   Q2 Q4 Q6 Q8 Q9 page 153

4. I know **that an equilateral triangle has 3 equal sides and 3 equal angles (60**°)
5. I know that an **isosceles triangle has 2 sides equal in length and that the angles opposite the equal sides are equal** (very important rule).
6. A **right angled triangle has 1 angle of 90°** and that **Pythagoras** rule can be used in these triangles to find the length of any 3rd side if I know the length of the other 2. $\mathbf{a^2 = b^2 + c^2}$
7. I know that t**riangles without any of the above properties are known as scalene triangles.**
8. I know that the **sum of angles in a triangle is 180°.**
9. I know that the **exterior angle in a triangle is equal to the sum of the interior opposite angles.**
   See example 1 Page 154
   Q1 Q3 Q5 Q9 Q11 Q13 Page 154

10. I know that a **Quadrilateral** is a figure with **4 sides** whose interior angles add up to **360°**:
    A square – all 4 sides same length, opp sides ||, all 4 angles are 90°, the **diagonals** are equal and bisect (divide into 2 equal parts) each other at right angles
    A Rectangle – each pair opp sides || and equal in length, all 4 angles are 90°, the **diagonals** are equal and bisect each other at right angles
    A Parallelogram – opp sides ||, opp sides equal in length, opp angles are equal, the **diagonals** of a parallelogram bisect each other, **consecutive angles** (going from one to its neighbour) are '**supplementary**' (add to 180°)
    A Rhombus (a leaning square pushed sideways) - 4 equal angles, opp sides are ||, opp angles are equal, **diagonals** bisect each other at right angles
    Example 1 Page 159
    Q1 Q3 Q5 Q9 Q10 Page 159

11. I know **congruent triangles are the same size and shape** (they are the same). Triangles can be shown to be congruent if they have 3 pairs of sides the same length **'SSS'**, 2 pairs of side lengths are the same length and the angle between the 2 sides is the same **'SAS'**, two pairs of angles are equal and the sides between the 2 equal angles are equal in length **'ASA'** or both triangles have a right angle, the hypotenuses are equal and one pair of corresponding sides are equal in length **'RHS'**.
    Example 1 page 163

12. I know that given 2 triangles with the same angles that a side opposite an angle in one triangle '**corresponds**' to the side opposite the same size angle in the second triangle.
    Example 2 Page 163
    Q1, Q2, Q4, Q7 Q10 Q12 Q14 Page 167

13. I know of and how to apply the theorem of Pythagoras for right angled triangles.
    Example 1 and 2 Page 168
    Q2 Q4 Q7 Q11 Q14 Q16 Q17 Page 169