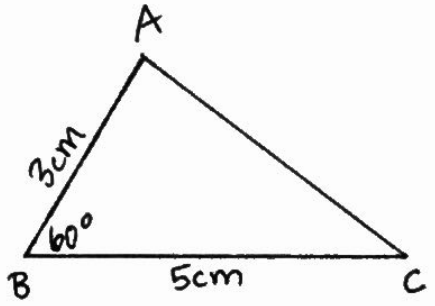
Shapes and Designs: Investigation 3 Important Information.

Problem 3.1: Building Triangles **What side lengths can form a Triangle?**	The sum of the two smaller sides of a triangle must be greater than the largest side in order to create a Triangle. **Example 1**: 3cm, 4cm, 5cm are side lengths capable of making a triangle because 3 + 4 =7 and 7 is greater than 5 **Example 2**: 3cm, 4cm, 7cm are side lengths **not** capable of making a triangle because 3 + 4 =7 and 7 is equal not greater than 7 **Example 3**: 3cm, 4cm, 9cm are side lengths **not** capable of making a triangle because 3 + 4 =7 and 7 is less than 9
Problem 3.2 Drawing Triangles **Can you draw triangles given specific information? What type of rules**	This is just being able to measure angles and lines and draw them. In a specific location based on the labeled Vertex. **Example**: Draw Triangle ABC. $\overline{AB}$ = 3cm $\overline{BC}$ = 5cm and $B = 60°$ 

Problem 3.4 Parallel Lines and Transversals

Transversal	A line that cuts through two or more parallel lines	Examples from Image below
Parallel lines	Lines that lie in the same plane but never intersect	
Corresponding angles	Angles in the same location on another line or shape.	∠a ≅ ∠e ∠b ≅ ∠f ∠c ≅ ∠g ∠d ≅ ∠h
Alternate interior angles	Pairs of angles found on the interior of two parallel lines and on opposite sides of the transversal	∠c ≅ ∠f ∠e ≅ ∠d
Alternate exterior angles	Pairs of angles found on the exterior of two parallel lines and on opposite sides of the transversal	∠a ≅ ∠h ∠g ≅ ∠b
Vertical angles	Opposite angles formed when two lines intersect- these angles have congruent measures	∠a ≅ ∠d ∠b ≅ ∠c ∠e ≅ ∠h ∠f ≅ ∠g
Supplementary angles	Two angles whose measures add up to 180° ∠a ≅ ∠c ∠e ≅ ∠g	∠a ≅ ∠b ∠c ≅ ∠d ∠b ≅ ∠d ∠e ≅ ∠f ∠g ≅ ∠h ∠f ≅ ∠h
Congruent angles	Angles that have the same measure	corresponding, vertical, alternate + alternate exterior interior