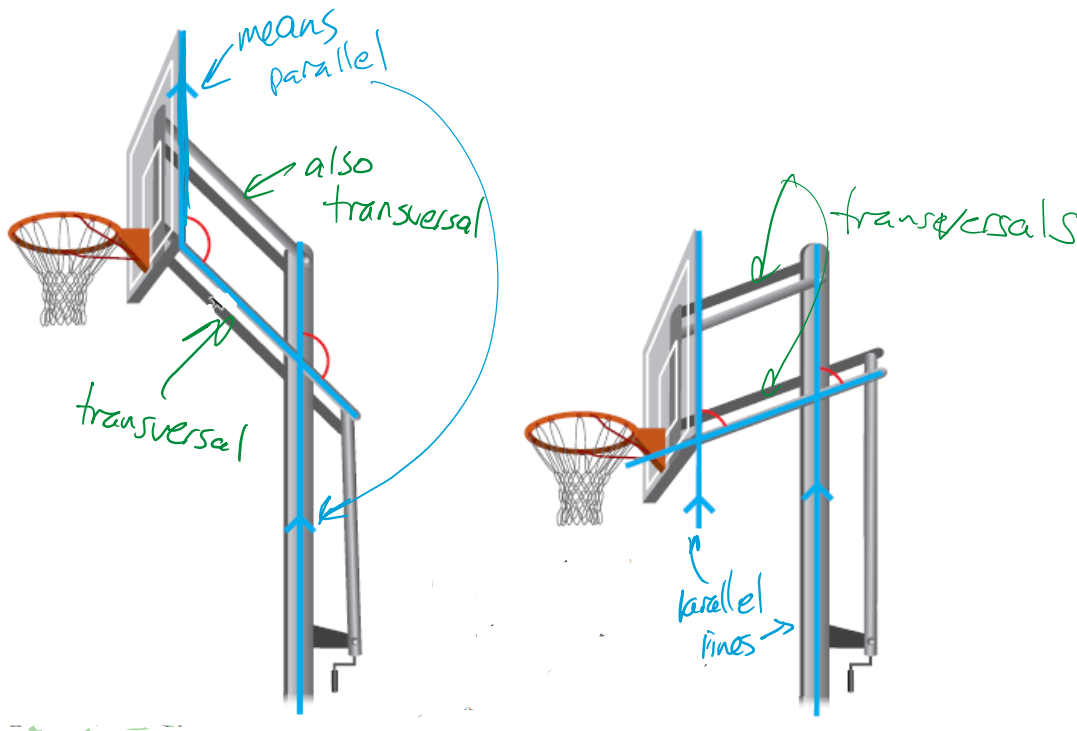


2.1.1: Exploring Parallel Lines

Parallel Lines lines that will never intersect. Denoted with the symbol \parallel

Transversal A line that intersects two or more other lines at distinct points

Label the parallel lines and the transversal on the diagrams below.



Exploring Angle Relationships

Given the diagram at the right, PREDICT the measures of the angles d through g .

$$\angle a = \underline{40^\circ}$$

$$\angle b = \underline{140^\circ}$$

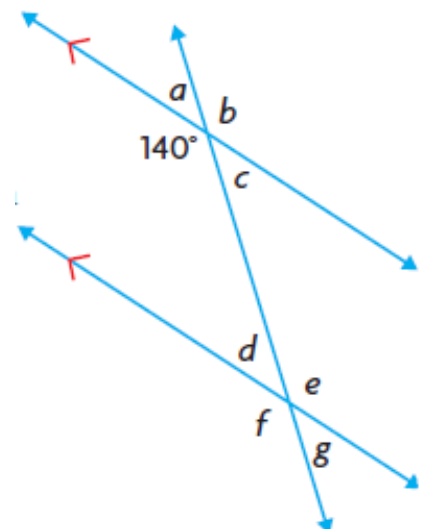
$$\angle c = \underline{40^\circ}$$

$$\angle d = \underline{40^\circ}$$

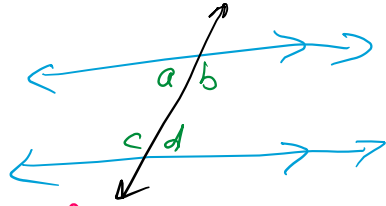
$$\angle e = \underline{140^\circ}$$

$$\angle f = \underline{140^\circ}$$

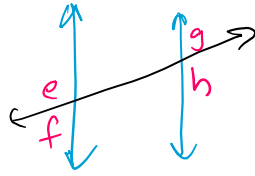
$$\angle g = \underline{40^\circ}$$



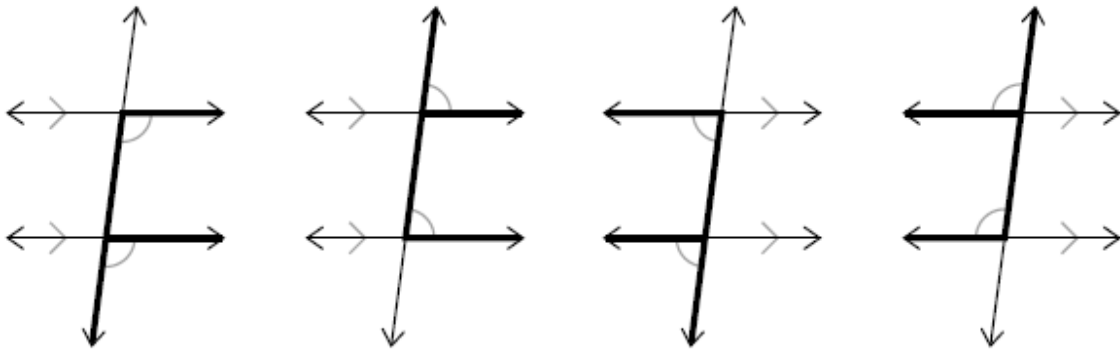
Interior Angles: angles formed by a transversal and two parallel lines and lie inside the parallel lines



Exterior Angles: angles formed by a transversal and 2 parallel lines and lie outside the parallel lines



Corresponding Angles: an exterior and interior angle that are non adjacent and on the same side of the transversal, F angles



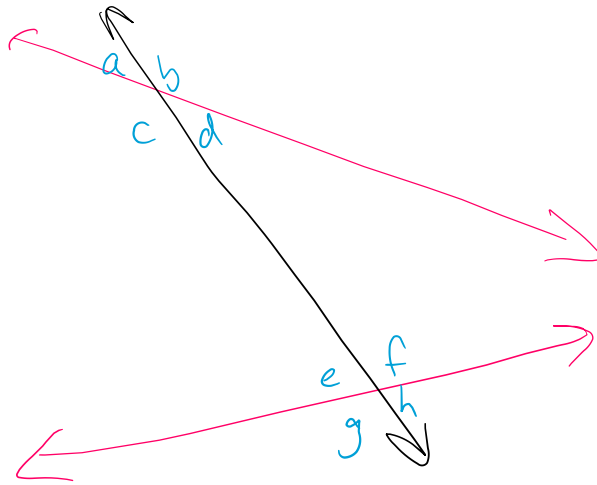
Conjecture: Corresponding angles are equal with parallel lines

Converse: A statement that is formed by switching the premise and the conclusion of another statement.

Write the converse of your conjecture for corresponding angles

Lines are parallel if corresponding angles are equal

Do your conjectures about corresponding angles and parallel lines hold when a transversal intersects a pair of non-parallel lines? Use diagrams to justify your decision.



Which pairs of angles are corresponding?

d, h

s, g

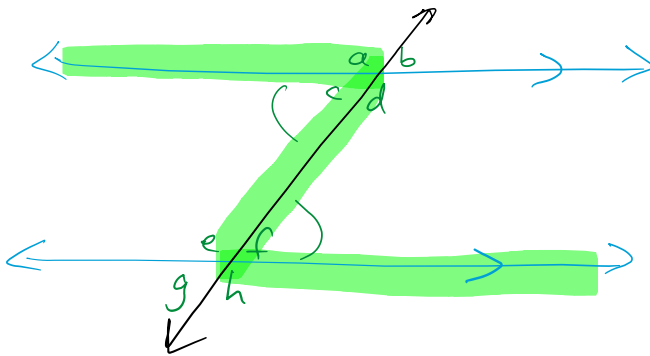
a, e

b, f

Conjectures don't hold for non-parallel lines

Alternate Interior Angles:

Two non-adjacent interior angles that are on opposite sides of the transversal (Z-angles)



For parallel lines

$$c = f$$

$$d = e$$