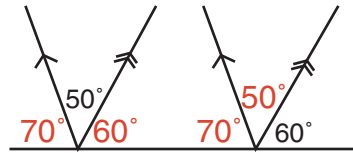## Unit 4: Geometry Lesson 4.1

Coach's Corner – II

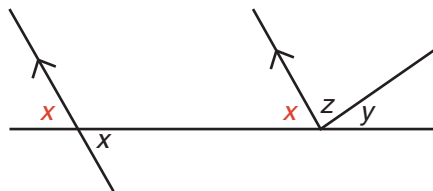1. Determine the unknown angles in the diagram.

Note there are two sets of parallel lines in the diagram.

Corresponding angles allow you to write the second 60°. The left most angle must be 70° so the angles on the line sum to 180° (50° + 60° + 70° = 180°). The 70° on the right is found using corresponding angles. The 50° on the right is found by recognizing that the angles on the line sum to 180° (50° + 60° + 70° = 180°).

2. Write an expression to represent the measure of angle z in terms of x and y.

Some of the unknown angles will need to be determined first. The angle opposite x and the angle corresponding to that angle are both equal to x.

Together x, y, and z form a straight line and so must sum to 180˚.

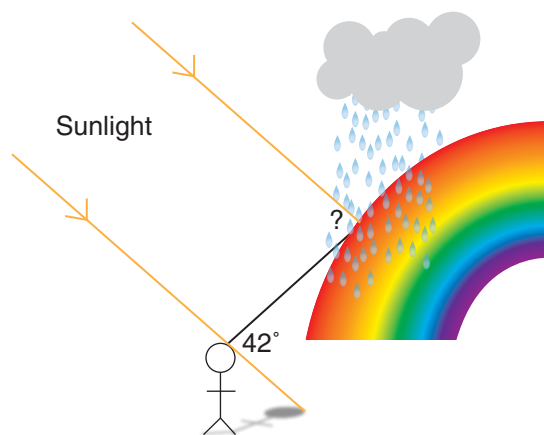$x + y + z = 180°$
$z = 180° - x - y$

3. The fence design in the picture would look a bit funny if the slats were not parallel to each other. Describe a method of ensuring parallel slats that could be used when building a fence like this.

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Responses will vary. One strategy is to make a jig using a pair of boards that form the same angle a front board should make with a back board. This jig could be used to check that all the corresponding angles are equal, which would ensure the lines are parallel.

4. A rainbow is formed when sunlight is reflected off raindrops at a particular angle. Suppose the angle between your line of sight to the rainbow and your line of sight to the top of your shadow is 42°. What can you conclude about the angle made between the sunlight, the rainbow, and your line of sight to the rainbow? Explain your reasoning.

The rays of sunlight are parallel so the 42° and the unknown angle are alternate interior angles. This means they are equal and the unknown angle is also 42°.

Please complete *Lesson 4.1 Game On!* located in *Workbook 4A* before proceeding to *Lesson 4.2*.