Year 7 · Geometry: Shapes, Angles and Moves

Name: _____ Date: _____

Hi there! This sheet helps you practise moving shapes around the grid, finding missing angles, and working with 3D shapes and their nets. Take your time and draw a picture whenever it helps.

Warm-up

1. A regular hexagon has 6 sides. What is the size of one exterior angle?

2. The interior angles of a triangle are 55° and 80°. What is the third angle?

3. Two angles sit on a straight line. One is 130°. What is the other (its supplement)?

4. How many faces does a cube have, and what 2D shape is each face?

Practice

5. Triangle ABC has vertices A(1, 1), B(4, 1) and C(1, 3). It is translated 2 units right and 3 units up. Write the new coordinates.

6. A point P(3, 2) is reflected across the y-axis. Where does it land?

7. The point Q(2, 5) is rotated 90° clockwise about the origin (0, 0). Find its new position.

8. Find the interior angle sum of a regular octagon (8 sides), then find the size of one interior angle.

9. Aroha is building a model triangular prism for a school project. List the 2D shapes that make up its faces and say how many of each she needs.

10. On a street in Avondale, two straight roads cross. Where they meet, one angle measures 118°. Find the size of the angle directly opposite it, and the size of the angle next to it (on a straight line).

Challenge

11. Two parallel fence lines are crossed by a straight diagonal path (a transversal). One angle the path makes with the top fence is $3x + 10$ degrees. The co-interior (same-side interior) angle it makes with the bottom fence is $2x + 20$ degrees. Co-interior angles between parallel lines add to 180°. Find x and both angles.

12. At a point on a straight line, three adjacent angles sit together and make up the straight line. Their sizes are $2x$, $3x$, and $x + 40$ degrees. Set up and solve an equation to find x, then find each angle.