Reasoning and Problem Solving
Regular and Irregular Polygons

Developing

1a. Omar is incorrect as shape C is an irregular polygon with 4 sides.

2a. Jack is incorrect as regular triangles have sides and angles of equal length. The triangle shown is a right-angled triangle, so it is not a regular polygon.

3a. 11 regular quadrilaterals (squares).

Expected

4a. Shamir is incorrect. Shape E is irregular because it has different length sides and angles. Shape D is regular as it has sides of equal length and the angles are the same size.

5a. Matty is incorrect as a regular polygon has all sides of equal length and all angles which are the same size.

6a. 7 regular polygons (6 regular triangles and 1 regular hexagon).

Greater Depth

7a. Andy is incorrect. Shape B and shape D are in the wrong place as they are irregular polygons. Shape G is also incorrect as it is not a polygon due to its curved side.

8a. Nehal is incorrect as the angles in a regular octagon each measure 135°.

9a. 7 regular polygons (6 regular triangles and 1 regular hexagon).

Developing

1b. Abbie is incorrect as shape A is an irregular polygon and shape D is a regular polygon.

2b. Sunita is incorrect as a regular polygon has equal angles and equal sides. The rectangle has sides of different lengths.

3b. 5 regular quadrilaterals (squares).

Expected

4b. Malia is incorrect. Shape C is an irregular polygon because it has different length sides and angles. Shape F is not a polygon due to its curved side. Shape D is a pentagon as it only has 5 sides.

5b. Alexa is incorrect as the angles in a regular pentagon each measure 108°.

6b. 6 regular polygons (5 regular squares and 1 regular pentagon).

Greater Depth

7b. Kelly is incorrect. Shape E is an irregular octagon. Shapes B and D are also in the wrong place as they are irregular polygons.

8b. Martha is incorrect as a regular decagon has 10 angles that each measure 144°.

9b. 6 regular polygons (5 regular squares and 1 regular octagon).