Lesson 80 MIXED

Angle-related problem-solving

WHAT THIS LESSON TEACHES

Angles on a straight line add up to 180°. Triangles also total 180°. Vertically opposite angles are equal.

→ If one angle on a line is 125°, the other must be 180° − 125° = 55°.

→ A triangle with angles 50° and 60° has a third angle of 180° − 50° − 60° = 70°.

MODEL THIS ON THE BOARD

SOLVING A CHAINED FIGURE STEP BY STEP

1. Find the triangle's third angle first: 180° − 65° − 40° = 75° (triangle angles).
2. Use that 75° to find the angle beside it on the straight line: 180° − 75° = 105° (straight line).
3. The vertically opposite angle to 105° is also 105°.

ANSWER KEY

b) 75°

c) 105°

Q1: 85°

Q2: 135°

Q3: 80°

Q4: 45°

Q5: 110°

a) Always — This is always true by definition of a straight angle.

b) Never — Order matters because some angles depend on finding others first.

c) Always — This is always true at the intersection point.

d) Always — This is always true for any triangle.

EXTENSION SHEET · STRETCH ANSWERS

S1: 64°

S2: 158° is obtuse

S3: 73°

S4: 110°

S5: 57°