Homework/Extension
Step 5: Angles in a Triangle 1

National Curriculum Objectives:

Mathematics Year 6: (6G2a) <u>Compare and classify geometric shapes based on their properties and sizes</u>
Mathematics Year 6: (6G4a) <u>Find unknown angles in any triangles, quadrilaterals, and regular polygons</u>

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)
Developing Calculate one missing angle in a triangle and apply knowledge of angles on a straight line. Angles are given multiples of 10.
Expected Calculate up to two missing angles in a triangle and apply knowledge of angles on a straight line. Angles are given in multiples of 5.
Greater Depth Calculate up to two or more missing angle in a triangle and apply knowledge of angles on a straight line. Angles are given in one degree increments.

Questions 2, 5 and 8 (Varied Fluency)
Developing Calculate a missing angle (when angles are given in multiples of 10) and sort triangles based on the size of angles.
Expected Calculate up to two missing angles (when angles are given in multiples of 5) and sort triangles based on the size of angles.
Greater Depth Calculate up to two missing angles (when angles are given in one degree increments) and sort triangles based on the size of angles.

Questions 3, 6 and 9 (Reasoning and Problem Solving)
Developing Calculate possible combinations of two missing angles using knowledge that the angles of a triangle total 180 degrees. Angles given in multiples of 10.
Expected Calculate possible combinations of two missing angles using knowledge that the angles of a triangle total 180 degrees. Angles given in multiples of 5 and extra parameters included.
Greater Depth Calculate possible combinations of two or more missing angles using knowledge that the angles of a triangle total 180 degrees. Angles given in one degree increments and extra parameters included.

More <u>Year 4 Decimals</u> resources.

Did you like this resource? Don't forget to <u>review</u> it on our website.

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Angles in a Triangle 1

1. Match each missing angle to the correct answer below.
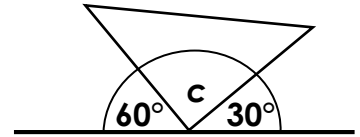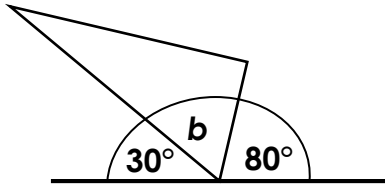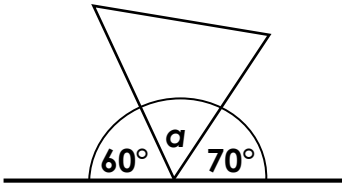
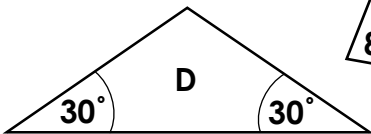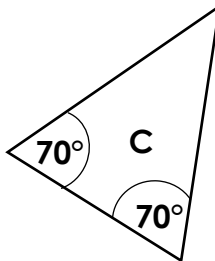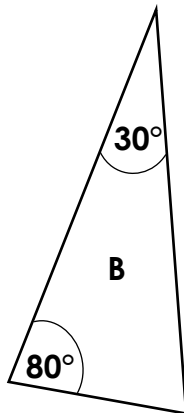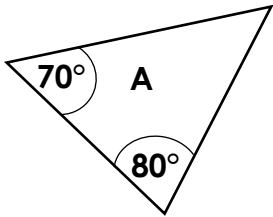| 70° | 90° | 50° |

Triangles not drawn to scale.

2. Calculate the missing angles, then sort each triangle into the correct place on the table.
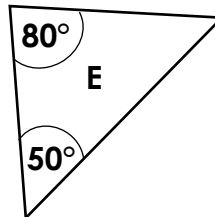
Scalene	Isosceles

Triangles not drawn to scale.

3. I have drawn a triangle.

- **Angle x measures 70°.**

- **The other two angles are multiples of 10.**
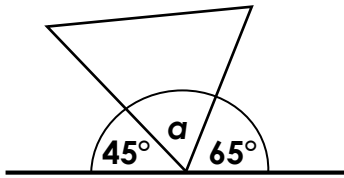
What could angles x and y be? List 5 possible combinations.

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Homework/Extension – Angles in a Triangle 1 – Year 6 Developing

Angles in a Triangle 1

4. Match each missing angle to the correct answer below.

45° a 65°	25° b 100°	85° c 35°
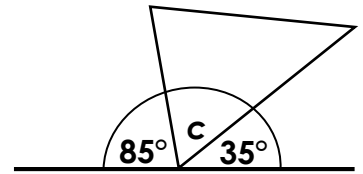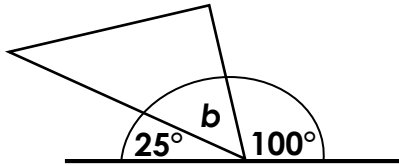
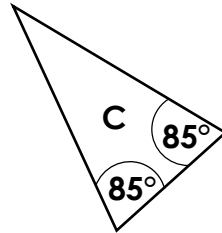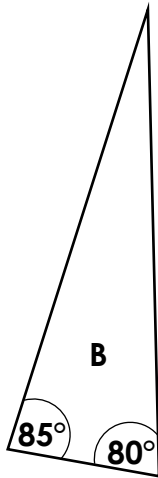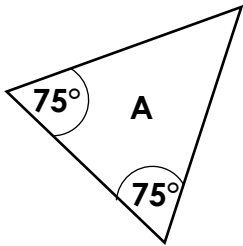| 60°	70°	55°

Triangles not drawn to scale.

5. Calculate the missing angles, then sort each triangle into the correct place on the table.

A: 75°, 75°

B: 85°, 80°

C: 85°, 85°

D: 55°, right angle

E: 85°, 45°
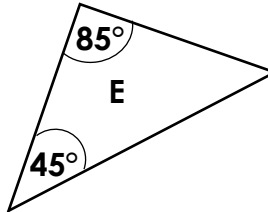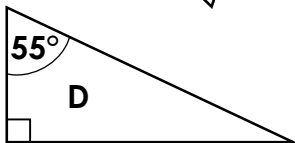
Scalene	Isosceles

Triangles not drawn to scale.

6. I have drawn a triangle.

- **Angle x measures 65°.**

- **Angles y and z are acute.**
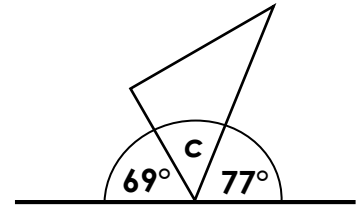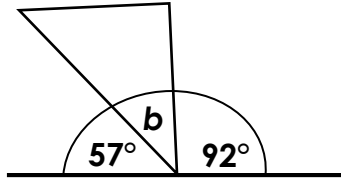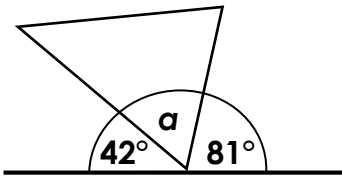
- **The two missing angles are multiples of 5.**

What could angles x and y be? List 6 possible combinations.

Angles in a Triangle 1

7. Match each missing angle to the correct answer below.

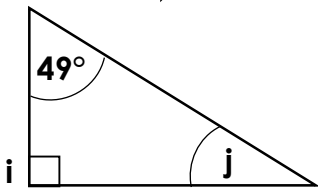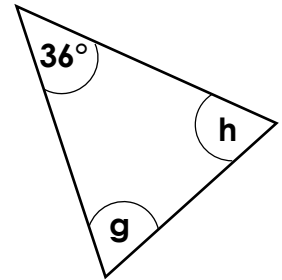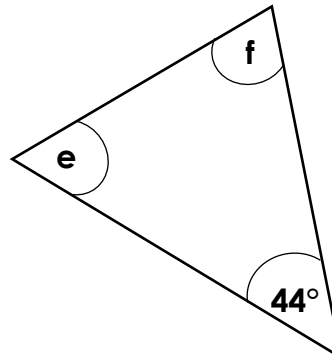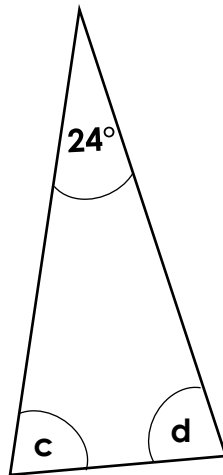42° a 81°   57° b 92°   69° c 77°

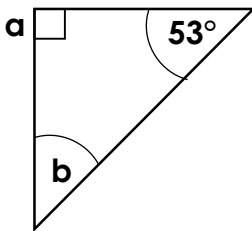| 34° | 31° | 57° |

Triangles not drawn to scale.

8. Calculate the missing angles. Triangles are either right angled or isosceles.

a 53°
b

49°
i j

24°
c d

e f 44°

36° h
g

Triangles not drawn to scale.

9. I have drawn a triangle.

- **Angle x measures 26°.**

- **Angle y is obtuse.**

- **Angle z is acute.**

What could angles x and y be? List 6 possible combinations.

Homework/Extension – Angles in a Triangle 1 – Year 6 Greater Depth

Developing

1. a = 50°, b = 70°, c = 90°
2. A = 30°, B = 70°, C = 40°, D = 120°, E = 50°

Scalene	Isosceles
A	C
B	D
	E

3. Possible combinations include: 100° and 10°; 90° and 20°; 80° and 30°; 70° and 40°; 60° and 50°.

Expected

4. a = 70°, b = 55°, c = 60°
5. A = 30°, B = 15°, C = 10°, D = 35°, E = 50°

Scalene	Isosceles
B	A
D	C
E	

6. Possible combinations include: 85° and 30°; 80° and 35°; 75° and 40°; 70° and 45°; 65° and 50°; 60° and 55°

Greater Depth

7. a = 57°, b = 31°, c = 34°
8. a = 90°, b = 37°, c and d = 78°; e and f = 68°; g and h = 72°; i = 90° and j = 41°.
9. Any combination where y and z total 154° with y being obtuse and z being acute.
Possible combinations include: y = 100° and z = 54°; y = 99° and z = 55°;
y = 98° and z = 56°; y = 97° and z = 57°; y = 96° and z = 58°; y = 95° and z = 59°.

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Homework/Extension – Angles in a Triangle 1 ANSWERS