

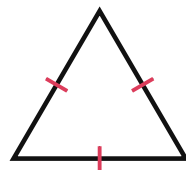
Boost Free Lessons - Year 5 Maths

Lesson 19: Classifying Triangles

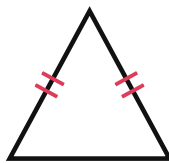
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Worked Example 1

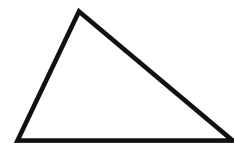
Name each triangle below by the length of its sides.



equilateral
3 equal sides



isosceles
2 equal sides



scalene
no equal sides

1. Triangles can be sorted by their **sides** or by their **angles**.
2. An **equilateral** triangle has three equal sides, marked with three dashes.
3. An **isosceles** triangle has exactly two equal sides, marked with two dashes.
4. A **scalene** triangle has no equal sides at all, so no dashes are marked.

Equilateral, isosceles and scalene

Worked Example 2

A triangle has angles of 90° , 45° and 45° . Name it two ways.

1. Sort it by angles first. One angle is exactly 90° , so it is **right-angled**.
2. Now sort it by sides. Two angles are equal, which means two sides are equal.
3. Two equal sides makes it **isosceles**.
4. Many triangles have two correct names, one for sides and one for angles.

It is a right-angled isosceles triangle

Remember: Sort triangles by **sides** (equilateral, isosceles, scalene) or by **angles** (right, acute, obtuse). Most triangles have a correct name in both systems.



Question 1: Name each triangle described below.

1. A triangle with three equal sides
2. A triangle with exactly two equal sides
3. A triangle with no equal sides
4. A triangle with one 90° angle
5. A triangle with all angles under 90°
6. A triangle with one angle of 120°
7. A triangle with angles 60° , 60° and 60°
8. A triangle with angles 90° , 30° and 60°



Question 2: Answer the following.

1. The angles of a triangle add to 180° . Two are 70° and 60° . Find the third.
2. Two angles are 90° and 35° . Find the third.
3. An isosceles triangle has an apex angle of 40° . Find each base angle.
4. What size is every angle in an equilateral triangle?
5. Can a triangle have two right angles? Explain.
6. Can a triangle be both scalene and right-angled? Explain.



Question 3: Answer the following questions.

1. A road sign is an equilateral triangle. What can you say about its angles?
2. A ladder leans against a wall, making a right angle with the ground. What type of triangle is formed?
3. A triangle has angles of 100° , 40° and 40° . Name it two ways.
4. Draw and label a scalene triangle in the space below.
5. Explain why every equilateral triangle is also isosceles, but not the other way round.





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Answers: Classifying Triangles**Question 1**

1. Equilateral
2. Isosceles
3. Scalene
4. Right-angled
5. Acute-angled
6. Obtuse-angled
7. Equilateral
8. Right-angled scalene

Question 2

1. 50°
2. 55°
3. 70° each
4. 60°
5. No. Two right angles already total 180° , leaving nothing for the third angle.
6. Yes. It can have one 90° angle and three sides of different lengths, such as 3, 4 and 5.

Question 3

1. Every angle is 60° , because the sides are all equal.
2. A right-angled triangle
3. Obtuse-angled and isosceles
4. Model: a triangle with sides of clearly different lengths and no marked equal sides.
5. Isosceles means at least two equal sides, and an equilateral triangle has three, so it qualifies. An isosceles triangle with only two equal sides is not equilateral.

