

Classifying Triangles

Name: _____ Date: _____ Score: _____ / 24

Q Quick Review

A **triangle** is a shape with 3 sides and 3 angles. We can sort triangles by their angles. A **right triangle** has exactly one 90° angle. An **acute triangle** has all three angles less than 90° . An **obtuse triangle** has one angle that is larger than 90° . We can also sort triangles by their sides. An **equilateral triangle** has all 3 sides equal. An **isosceles triangle** has exactly 2 sides equal. A **scalene triangle** has no equal sides — all 3 sides are different lengths.

◇ **Example:** A triangle has one angle that measures 110° . The other two angles are smaller. How would you classify this triangle by its angles?

⇒ Look at the biggest angle: it measures 110° . Compare that to 90° . Since 110° is larger than 90° , the triangle has one obtuse angle. A triangle with an angle bigger than 90° is called an obtuse triangle, no matter what the other angles are.

Answer: obtuse triangle

PRACTICE

Classify each triangle by its angles or by its sides as described.

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|--|-------|---|-------|
| 1. A triangle with one 90° angle | _____ | 12. A triangle with angles $70^\circ, 60^\circ, 50^\circ$ | _____ |
| 2. A triangle with all 3 sides equal | _____ | 13. A triangle with sides 9, 9, 4 | _____ |
| 3. A triangle with exactly 2 equal sides | _____ | 14. A triangle with one angle of 90° and two of 45° | _____ |
| 4. A triangle with no equal sides | _____ | 15. A triangle with sides 4, 8, 11 | _____ |
| 5. A triangle with one angle of 120° | _____ | 16. A triangle with angles $80^\circ, 80^\circ, 20^\circ$ | _____ |
| 6. A triangle with angles $60^\circ, 60^\circ, 60^\circ$ | _____ | 17. A triangle with one angle of 150° | _____ |
| 7. A triangle with sides 5, 5, 8 | _____ | 18. A triangle with sides 6, 6, 6 | _____ |
| 8. A triangle with sides 3, 6, 7 | _____ | 19. A triangle with sides 10, 10, 14 | _____ |
| 9. A triangle with angles $90^\circ, 45^\circ, 45^\circ$ | _____ | 20. A triangle with angles $90^\circ, 60^\circ, 30^\circ$ | _____ |
| 10. A triangle with sides 7, 7, 7 | _____ | | |
| 11. A triangle with one angle of 100° | _____ | | |

◆ Word Problems

21. Emma cuts a triangle out of paper for a craft. She measures its three sides and finds they are 5 cm, 5 cm, and 5 cm. What kind of triangle did Emma cut? _____
22. A road sign is shaped like a triangle. One of its angles measures 90° . What kind of triangle is the sign, classified by its angles? _____
23. Carlos draws a triangle where the three angles measure $55^\circ, 65^\circ,$ and 60° . How should Carlos classify his triangle by its angles? _____
24. Ava measures the sides of a triangular flag and gets 12 in, 9 in, and 15 in. Classified by its sides, what kind of triangle is the flag? _____



Answer Keys

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. right triangle 2. equilateral triangle 3. isosceles triangle 4. scalene triangle 5. obtuse triangle 6. acute triangle 7. isosceles triangle 8. scalene triangle 9. right triangle 10. equilateral triangle 11. obtuse triangle 12. acute triangle | <ol style="list-style-type: none"> 13. isosceles triangle 14. right triangle 15. scalene triangle 16. acute triangle 17. obtuse triangle 18. equilateral triangle 19. isosceles triangle 20. right triangle 21. an equilateral triangle 22. a right triangle 23. an acute triangle 24. a scalene triangle |
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Step-by-Step Explanations

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| <ol style="list-style-type: none"> 1. Exactly one 90° angle makes it a right triangle. 2. All three sides equal means the triangle is equilateral. 3. Exactly two equal sides makes the triangle isosceles. 4. When all three sides are different, the triangle is scalene. 5. An angle of 120° is larger than 90°, so the triangle is obtuse. 6. All three angles are less than 90°, so this is an acute triangle. 7. Two sides are equal (5 and 5), so the triangle is isosceles. 8. All three sides are different lengths, so the triangle is scalene. 9. It has a 90° angle, so it is a right triangle. 10. All three sides are the same length, so it is equilateral. 11. 100° is greater than 90°, so the triangle is obtuse. 12. Every angle is below 90°, so the triangle is acute. | <ol style="list-style-type: none"> 13. Two sides match (9 and 9), so it is an isosceles triangle. 14. The 90° angle tells us it is a right triangle. 15. No two sides are equal, so the triangle is scalene. 16. All three angles are under 90°, so it is an acute triangle. 17. 150° is far bigger than 90°, so the triangle is obtuse. 18. All three sides are equal, so the triangle is equilateral. 19. Two sides are equal (10 and 10), so it is isosceles. 20. One angle is exactly 90°, so this is a right triangle. 21. All three sides are equal at 5 cm, so the triangle is equilateral. 22. A triangle with one 90° angle is a right triangle. 23. Each angle (55°, 65°, and 60°) is less than 90°, so the triangle is acute. 24. The three sides are all different lengths, so the triangle is scalene. |
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