30-60-90 FORMULAS

What are the special triangles 30, 60 90? How to deal with 30-60-90 formulas? Get answers to all these crucial questions and more in an exceptional resource created by Edulyte's Maths experts.

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Q1: What is the ratio of the side opposite the 30-degree angle to the hypotenuse in a 30-60-90 triangle?

A: 1:1
B: 1:2
C: √2:1
D: √3:1

Q2: What is the ratio of the side opposite the 60-degree angle to the hypotenuse in a 30-60-90 triangle?

A: 1:1
B: 1:2
C: √2:1
D: √3:1

Q3: If the shorter leg of a 30-60-90 triangle measures 6 cm, what is the hypotenuse length?

A: 3 cm
B: 6 cm
C: 9 cm
D: 12 cm

Q4: In a 30-60-90 triangle, if the length of the shorter leg is 8 units, what is the length of the hypotenuse?

A: 4 units
B: 8 units
C: 12 units
D: 16 units

Q5: In a 30-60-90 triangle, if the length of the shorter leg (opposite the 30-degree angle) is 'a', what are the lengths of the other sides?

A: Hypotenuse: 2a, Longer leg: √3a
B: Hypotenuse: a, Longer leg: a√3
C: Hypotenuse: a/2, Longer leg: a√3
D: Hypotenuse: √3a, Longer leg: 2a

Q6: What is a 30-60-90 triangle?

A: A triangle with three equal angles measuring 30 degrees each.
B: A triangle with three equal angles measuring 60 degrees each.
C: A triangle with angles measuring 30 degrees, 60 degrees, and 90 degrees.
D: A triangle with angles measuring 45 degrees, 60 degrees, and 90 degrees.

Q7: Which of the following best describes using a 30-60-90 triangle?

A: Determining the angles in any triangle.
B: Calculating the area of a circle.
C: Solving problems involving right angles and proportional side lengths.
D: Constructing equilateral triangles only.

Q8: In a 30-60-90 triangle, if the length of the longer leg (opposite the 60-degree angle) is 'a', what are the lengths of the other sides?

A: Shorter leg: a Hypotenuse: a√2
B: Shorter leg: a Hypotenuse: 2a
C: Shorter leg: a/2, Hypotenuse: a
D: Shorter leg: a√3, Hypotenuse: 2a

Q9: Which of the following statements is true about a 30-60-90 triangle?

A: The longer leg is twice the length of the shorter leg.
B: The sum of the interior angles is 180 degrees.
C: The side opposite the 30-degree angle is the longest.
D: The ratios between the side lengths are 1:2:√3.

Q10: What distinguishes a 30-60-90 triangle from other triangles?

A: It has angles measuring 30 degrees, 60 degrees, and 90 degrees.
B: It has equal side lengths on all three sides.
C: It follows the Pythagorean theorem.
D: Its angles can be calculated using trigonometric functions.

Answers

Q1: B - 1:2

Q2: D - √3:1

Q3: D - 12 cm

Q4: C - 12 units

Q5: A - Hypotenuse: 2a, Longer leg: √3a

Q6: C - A triangle with angles measuring 30 degrees, 60 degrees, and 90 degrees.

Q7: C - Solving problems involving right angles and proportional side lengths.

Q8: D - Shorter leg: a√3, Hypotenuse: 2a

Q9: D - The ratios between the side lengths are 1:2:√3.

Q10: A - It has angles measuring 30 degrees, 60 degrees, and 90 degrees.