Triangles Quiz

1. If two angles of a triangle are 45° and 45°, what is the third angle?

A) 45°

B) 90°

C) 60°

D) 30°

2. What is the sum of the interior angles of a triangle?

A) 180°

B) 360°

C) 270°

D) 90°

3. If the sides of a triangle are in the ratio 3:4:5, what kind of triangle is it?

A) Equilateral

B) Isosceles

C) Right-angled

D) Scalene

4. The Pythagorean Theorem is applicable in which type of triangle?

A) Equilateral

B) Isosceles

C) Right-angled

D) All triangles

5. What is the value of an exterior angle of an equilateral triangle?

A) 60°

B) 120°

C) 180°

D) 90°

6. If in a triangle, the lengths of two sides are 7 cm and 10 cm, what can be the length of the third side?

A) 17 cm

B) 3 cm

C) 2 cm

D) 15 cm

7. In a right-angled triangle, if one angle is 30°, what is the measure of the other non-right angle?

A) 30°

B) 60°

C) 90°

D) 45°

8. How many altitudes can a triangle have?

A) One

B) Two

C) Three

D) Infinite

9. The sides of a triangle are 5 cm, 12 cm, and 13 cm. Is this a right triangle?

A) Yes

B) No

C) Cannot be determined

D) Sometimes

10. If the perimeter of an equilateral triangle is 48 cm, what is the length of one side?

A) 12 cm

B) 16 cm

C) 24 cm

D) 32 cm

11. What is the height of an equilateral triangle with side 8 cm? (Given: ( sqrt{3} = 1.732 ))

A) (4sqrt{3}) cm

B) (4sqrt{2}) cm

C) (8sqrt{3}) cm

D) (8sqrt{2}) cm

12. Which of the following is not a congruence criterion for triangles?

A) SSS (Side-Side-Side)

B) SAS (Side-Angle-Side)

C) AAA (Angle-Angle-Angle)

D) AAS (Angle-Angle-Side)

13. The ratio of the angles of a triangle is 2:3:4. What are the measures of the angles?

A) 40°, 60°, 80°

B) 30°, 45°, 60°

C) 20°, 60°, 100°

D) 36°, 54°, 90°

14. What is the area of a triangle with base 8 cm and height 9 cm?

A) 36 cm²

B) 72 cm²

C) 64 cm²

D) 18 cm²

15. If two sides of a triangle are equal, the triangle is:

A) Equilateral

B) Isosceles

C) Scalene

D) Right-angled

16. If a triangle has sides of 3 cm, 4 cm, and 5 cm, what is its area?

A) 6 cm²

B) 12 cm²

C) 10 cm²

D) 15 cm²

17. Can a triangle have two right angles?

A) Yes

B) No

C) Only in non-Euclidean geometry

D) Depends on the triangle

18. What is the length of the hypotenuse in a right-angled triangle if one of

the legs is 6 cm and the other leg is 8 cm?

A) 10 cm

B) 14 cm

C) 12 cm

D) 9 cm

19. What is the range of the measure of the third side of a triangle if the lengths of two sides are 11 cm and 23 cm?

A) 12 cm to 34 cm

B) 13 cm to 33 cm

C) 14 cm to 32 cm

D) 11 cm to 35 cm

20. Which of the following is true for the angles of a triangle?

A) The sum of the angles is always greater than 180°.

B) The sum of the angles is always less than 180°.

C) The sum of the angles is always equal to 180°.

D) The sum of the angles can be less than or equal to 180°.

Here is the answer key for the Triangles quiz:

1. B) 90°

2. A) 180°

3. C) Right-angled

4. C) Right-angled

5. B) 120°

6. A) 17 cm (The third side must be less than the sum and more than the difference of the other two sides, i.e., between 3 and 17 cm.)

7. B) 60°

8. C) Three

9. A) Yes (5² + 12² = 13², which satisfies Pythagorean Theorem)

10. B) 16 cm

11. A) (4sqrt{3}) cm

12. C) AAA (Angle-Angle-Angle)

13. A) 40°, 60°, 80°

14. B) 72 cm²

15. B) Isosceles

16. A) 6 cm²

17. B) No (A triangle can only have one right angle because the sum of the angles must be 180°.)

18. A) 10 cm

19. A) 12 cm to 34 cm (The third side must be greater than the difference and less than the sum of the other two sides.)

20. C) The sum of the angles is always equal to 180°.

If you're ready to continue, we can proceed with the quiz for the next chapter or if you have any specific requests, feel free to let me know!