

## Triangles Quiz

1. If two angles of a triangle are  $45^\circ$  and  $45^\circ$ , what is the third angle?  
A)  $45^\circ$   
B)  $90^\circ$   
C)  $60^\circ$   
D)  $30^\circ$
2. What is the sum of the interior angles of a triangle?  
A)  $180^\circ$   
B)  $360^\circ$   
C)  $270^\circ$   
D)  $90^\circ$
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)  $60^\circ$   
B)  $120^\circ$   
C)  $180^\circ$   
D)  $90^\circ$
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  $30^\circ$ , what is the measure of the other non-right angle?  
A)  $30^\circ$   
B)  $60^\circ$   
C)  $90^\circ$   
D)  $45^\circ$
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) ( $4\sqrt{3}$ ) cm
- B) ( $4\sqrt{2}$ ) cm
- C) ( $8\sqrt{3}$ ) cm
- D) ( $8\sqrt{2}$ ) 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)  $40^\circ$ ,  $60^\circ$ ,  $80^\circ$
- B)  $30^\circ$ ,  $45^\circ$ ,  $60^\circ$
- C)  $20^\circ$ ,  $60^\circ$ ,  $100^\circ$
- D)  $36^\circ$ ,  $54^\circ$ ,  $90^\circ$

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

- A)  $36 \text{ cm}^2$
- B)  $72 \text{ cm}^2$
- C)  $64 \text{ cm}^2$
- D)  $18 \text{ cm}^2$

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)  $6 \text{ cm}^2$
- B)  $12 \text{ cm}^2$
- C)  $10 \text{ cm}^2$
- D)  $15 \text{ cm}^2$

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  $180^\circ$ .
- B) The sum of the angles is always less than  $180^\circ$ .
- C) The sum of the angles is always equal to  $180^\circ$ .
- D) The sum of the angles can be less than or equal to  $180^\circ$ .

Here is the answer key for the Triangles quiz:

- 1. B)  $90^\circ$
- 2. A)  $180^\circ$
- 3. C) Right-angled
- 4. C) Right-angled
- 5. B)  $120^\circ$
- 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)  $60^\circ$
- 8. C) Three
- 9. A) Yes ( $5^2 + 12^2 = 13^2$ , which satisfies Pythagorean Theorem)
- 10. B) 16 cm
- 11. A)  $(4\sqrt{3})$  cm
- 12. C) AAA (Angle-Angle-Angle)
- 13. A)  $40^\circ$ ,  $60^\circ$ ,  $80^\circ$
- 14. B)  $72\text{ cm}^2$
- 15. B) Isosceles
- 16. A)  $6\text{ cm}^2$
- 17. B) No (A triangle can only have one right angle because the sum of the angles must be  $180^\circ$ .)
- 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  $180^\circ$ .

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!