Practice Worksheet: Introduction to Triangles

Section A: Multiple Choice

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

A) 90°
B) 180°
C) 270°
D) 360°

2. What is the name of the theorem that states the sum of the lengths of any two sides of a triangle must be greater than the length of the third side?

A) Triangle Inequality Theorem
B) Angle Sum Property
C) Pythagorean Theorem
D) Congruent Triangles Theorem

3. How many vertices does a triangle have?

A) 2
B) 3
C) 4
D) 5

4. What is the name of the triangle with all sides of equal length?

A) Equilateral Triangle
B) Isosceles Triangle
C) Scalene Triangle
D) Right Triangle

5. What is the sum of the lengths of any two sides of a triangle?

A) Less than the length of the third side
B) Greater than the length of the third side
C) Equal to the length of the third side
D) Not related to the length of the third side

Section B: Short Answer

6. Explain the concept of an equilateral triangle.

7. What is the triangle inequality theorem?

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

9. What is the name of the theorem that states the sum of the lengths of any two sides of a triangle must be greater than the length of the third side?

10. Explain the concept of a triangle.

Section C: Application Problems

11. A triangle has side lengths of 3 cm, 4 cm, and 5 cm. Is it possible to construct this triangle? Explain your answer.

12. A triangle has two angles measuring 60° and 80°. Find the third angle of the triangle.

13. A triangle has side lengths of 5 cm, 6 cm, and 7 cm. Is it possible to construct this triangle? Explain your answer.

14. A triangle has an angle measuring 30°. Find the other two angles of the triangle.

15. A triangle has side lengths of 2 cm, 3 cm, and 4 cm. Is it possible to construct this triangle? Explain your answer.

Answer Key

1: 180°

2: Triangle Inequality Theorem

3: 3

4: Equilateral Triangle

5: Greater than the length of the third side

6: An equilateral triangle is a triangle with all sides of equal length.

7: The triangle inequality theorem states that the sum of the lengths of any two sides of a triangle must be greater than the length of the third side.

8: 180°

9: Triangle Inequality Theorem

10: A triangle is a polygon with three sides and three angles.

11: Yes, it is possible to construct this triangle.

12: 100°

13: Yes, it is possible to construct this triangle.

14: 60° and 90°

15: Yes, it is possible to construct this triangle.