<p style="text-align:center">**FIRST TERM MODEL QUESTION PAPER 2024 WITH ANSWER KEY SET 1**
MATHS - Standard VII
Time: 2 hours
Max. Marks: 50
(Prepared by www.educationobserver.com)</p>

Instructions:

1. Read the questions carefully before answering.

2. All activities carries equal marks.

3. Attempt any **SIX** activities from the given EIGHT activities.

Activity 1

Two parallel lines are cut by a transversal. Given that one of the angles measures 60°, calculate all the other angles formed by the intersection. Provide a diagram for reference.

Activity 2

Draw a triangle with sides measuring 5 cm, 6 cm, and 7 cm. Measure and label all angles. Discuss whether it is a right triangle or not.

Activity 3

Calculate the product of $\frac{4}{5} \times \frac{3}{7}$ and $\frac{5}{8} \times \frac{2}{3}$. Explain the multiplication of fractions with a real-life example.

Activity 4

A rope of 20 meters is cut into 8 equal pieces. How much of the rope remains if 5 pieces are used? Express your answer as a fraction and in meters.

Activity 5

In a parallelogram, one of the angles measures 70°. Calculate all other angles and discuss the relationship between opposite angles in a parallelogram.

Activity 6

Construct a quadrilateral where two opposite sides are parallel and the other two sides are equal in length. Measure and label all sides and angles.

Activity 7

Calculate the area and perimeter of a rectangle with a length of 8 cm and a width of 4.5 cm. If a square has the same perimeter, what is the side length of the square, and what is its area?

Activity 8

A triangle has angles measuring 30°, 60°, and 90°. Construct the triangle using a protractor and ruler. Explain the special properties of this triangle.

Answer Key:

Activity 1

Given that one of the angles formed by a transversal cutting two parallel lines is 60°:

- Corresponding angles: 60°
- Alternate interior angles: 60°
- Co-interior angles: 120°
- Vertical opposite angles: 60°
- The other angles are 120° each.

Diagram: (Parallel lines with a transversal and labeled angles)

Activity 2

For a triangle with sides 5 cm, 6 cm, and 7 cm:

- Measure angles using a protractor:
    - Angle A: approximately 45°
    - Angle B: approximately 60°
    - Angle C: approximately 75°

This triangle is not a right triangle because no angle is 90°.

Activity 3

1. $\frac{4}{5} \times \frac{3}{7} = \frac{12}{35}$

2. $\frac{5}{8} \times \frac{2}{3} = \frac{10}{24} = \frac{5}{12}$

Real-life example: If a cake is divided into 5 equal parts, and 3 out of 7 pieces are taken, the remaining fraction is represented by multiplying fractions.

Activity 4

Total rope: 20 meters

Length of each piece: $\frac{20}{8} = 2.5$ meters

Length used (5 pieces): $5 \times 2.5 = 12.5$ meters

Remaining rope: $20 - 12.5 = 7.5$ meters or $\frac{3}{8}$ of the rope remains.

Activity 5

In a parallelogram:

- Given angle: 70°

- Opposite angle: 70°

- Adjacent angles: 110° each (since adjacent angles are supplementary).

The relationship is that opposite angles are equal, and adjacent angles are supplementary (sum to 180°).

Activity 6

Construct a quadrilateral with two opposite sides parallel and the other two sides equal:

- Measure and label the angles:

  - Parallel sides: equal lengths.

  - Non-parallel sides: equal lengths.

- The sum of interior angles is 360°.

Activity 7

For a rectangle with length 8 cm and width 4.5 cm:

- Perimeter: $2 \times (8 + 4.5) = 25$ cm

- Area: $8 \times 4.5 = 36$ cm²

If a square has the same perimeter:

- Side length: $\frac{25}{4} = 6.25$ cm

- Area: $6.25 \times 6.25 = 39.06$ cm²

Activity 8

For a triangle with angles 30°, 60°, and 90°:

- Construct the triangle using a protractor.
- This is a right-angled triangle with special properties:
    - The side opposite the 90° angle is the hypotenuse (longest side).
    - The side opposite the 30° angle is half the hypotenuse.