Maharashtra State Board
Class VI Mathematics
Sample Paper 2

Time: 2 hr 30 min   **Total Marks: 60**

**Note:**

1. All questions are compulsory.

2. Use of calculator is not allowed.

**Q1. Solve the following:**   **[12 × 1 = 12]**

1. Calculate the area of a square plot whose sides measure 18 m.

2. Maniben took a loan of Rs. 8000 from the Women's Co-operative Society
    and returned an amount of Rs. 8480 to the society after six months.
    State what is the principal, the interest and the period in the above
    example.

3. Observe the figure. Write the names of the points M, N, O, L, K, T in the
    proper columns according to their location.
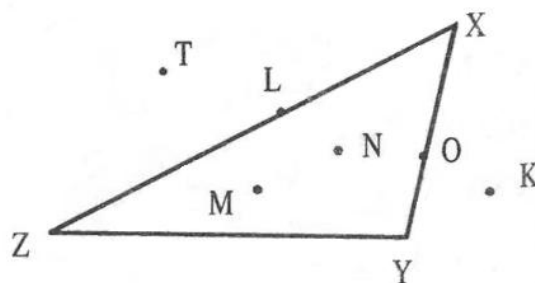
Points in the interior of ΔXYZ	Points on ΔXYZ	Points in the exterior of ΔXYZ

4. With reference to the numbers shown on the number line below, which
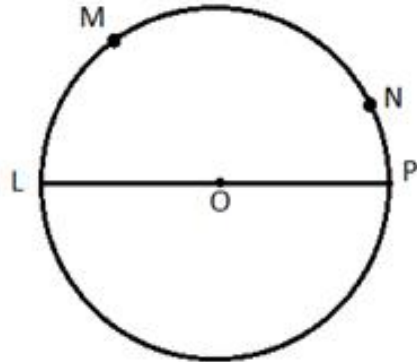   numbers are greater than –4 and less than +2?
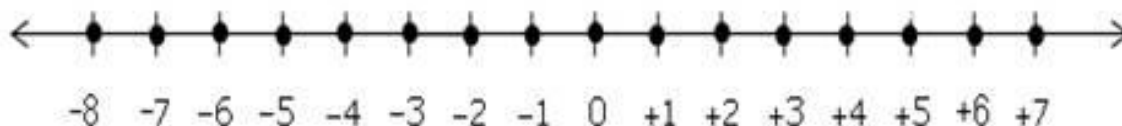
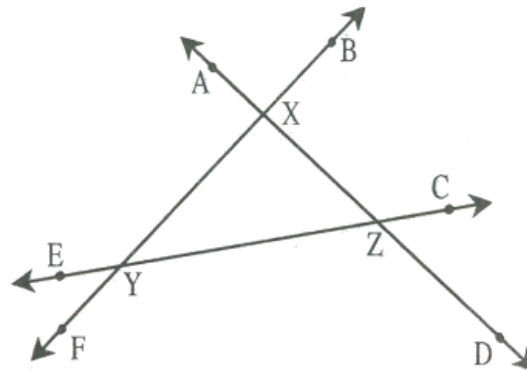5. Convert $\dfrac{29}{25}$ into percentage.

6. $2 = \dfrac{10}{5}$

   Is the above statement an equality or an equation?

7. Name 4 arcs which can be formed in the given circle.

8. Write the biggest number and the smallest number in the group of integers?

9. Write the names of angles which are neither angles of the triangle nor its exterior angles.

10. Identify whether the following algebraic expression is a monomial, binomial or a trinomial.
    $ab^2 - 2ab + 4abc$

11. If every side of a room measures 4 m, how many cubic metres of air does it hold?

12. What is the magnitude of the number 0?

Q2. Solve the following: [8 × 2 = 16]

1. Draw a circle of diameter 9.4 cm.

2. If the area of a rectangle is 243 sq. m and the length is 27 m, what is the breadth of the rectangle?

3. Perform (17mn − 10ab) − (−12ab + 8mn) in a vertical arrangement.

4. Using properties of equality, solve the following equation:
   p + 4 = 11

5. Sameer went to a restaurant with his family. His father gave 2% of the total amount as tax. If the bill was Rs. 1250, how much amount did he pay as the tax? .

6. Draw a vertical number line. On this line, show numbers up to -5 below zero and up to +5 above it.

7. In $\triangle RST$, $m\angle R = 70°$, $m\angle S = 30°$. Find $m\angle T$.

8. Find the cost of digging a cuboidal pit 6 m long, 5 m wide and 2.5 m deep at the rate of Rs. 25 per m^3.

Q3. Solve the following [Any five]: [5 × 3 =15]

1. Find the radius of the circles with the following diameters:
   (i) 114 mm
   (ii) 2.06 cm
   (iii) 0.55 m

2. How many cubes with side 20 cm will be needed to make a cuboid with dimensions 160 cm × 500 cm × 100 cm.

3. Simplify:
   [180 + (−15) + 20] − [(−2) × (−11) − (4 + 3)]

4. Draw a line MN. Take a point L anywhere on it. Through point L, draw a perpendicular to line MN (Using the compass.)

5. At a certain rate, the interest on Rs. 5000 is Rs. 1200 after 4 years. What will be the interest on Rs. 15000 in the same time and at the same rate?

6. Add $p^2 + 2pq + q^2$ and $q^2 − 2pq$. Find the value of the resulting algebraic expression when p = 3 and q = 5.

7. ∠ACD is an exterior angle of ΔABC. The measures of ∠A and ∠B are equal. If m∠ACD = 140°, find the measures of ∠A and ∠B.

Q4. Solve the following [Any three]:   [3 × 4 =12]

1. Draw a line segment XY of length 8.4 cm. Draw its perpendicular bisector PQ intersecting line XY at point O. What is the length of line segment OX and OY?

2. The radius of one circle is 4.2 cm. The radius of another circle is twice the radius of the given circle. Calculate the radius and diameter of the bigger circle?

3. The dimensions of a cuboidal tank in a juice factory is 10 m × 8 m × 6 m. Juice from this tank need to be packed in tetra packs with dimensions 4 cm × 3 cm × 10 cm. How many tetra packs of juice can be made?

4. The percentage of literacy in some Indian States in the year 1981 is given below. Draw a bar graph for the data.

State	Literacy (percentage)
Maharashtra	45
Goa	65
Gujarat	40
Andhra Pradesh	60

5. What will be the interest for 6 years on Rs. 3500 principal at the rate of 5 p.c.p.a?

Q5. Solve the following [Any one]:   [1 × 5 = 5]

1. A can of paint is sufficient to paint 25 m^2. Piyush plans to paint the walls of his house. Two walls of the house are 15 m long and 20 m wide, while two other walls are 15 m long and 15 m wide. How many cans of paint will he need?

2. The annual sale of a product in different years is given below.

Year	1995	2000	2005	2010	2015
Annual Sales Rs. (in lakhs)	1.5	3.4	2.5	4.8	3.2

Draw a bar graph to show the given data. Write the numbers 0, 1, 2, … at 1 cm intervals of y-axis.