

# Maharashtra Board

## Class VII

### Mathematics

### Sample Paper – 2

**Time: 2 hr 30**

**Total Marks: 60**

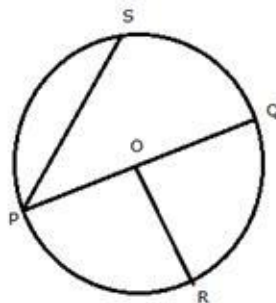
**min Note:**

1. All questions are compulsory.
2. Use of calculator is not allowed.

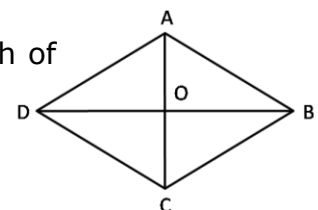
**Q1. Solve the following:**

**[12 × 1 = 12]**

1. What is the additive inverse of  $\frac{-23}{42}$ ?
2. Calculate C.P. when S.P. = Rs. 582 and Loss = Rs. 82
3. Segment  $PQ \cong$  Segment  $XY$ .  
Length of segment  $PQ$  is 5.4 cm. What can you say about the length of  $XY$ ?
4. Write any three properties of a parallelogram.
5. What is the area of a square table top whose one side measures 40.4 cm?
6. Find the product of  $(x + 5)$  and  $(x - 5)$  using the formula.
7. Write the factors of  $36a^2b$ .
8. Name all the radii drawn in the given figure.



9. A cubical block has an edge of length 5.3 cm. What is its total surface area?
10.  $\square ABCD$  is a rhombus. If  $OD = 4$  cm, what is the length of  $BD$ ?



11. Expand  $(4 + x)^2$

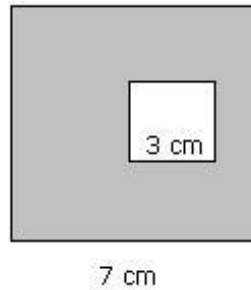
12.  $\frac{-25}{44}$  and  $\frac{-41}{44}$

Which of the given rational number is greater?

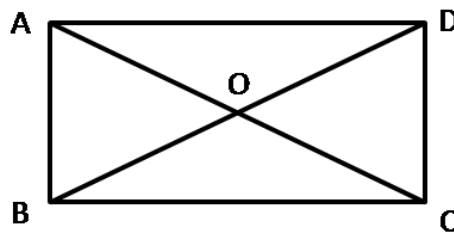
**Q2. Solve the following:**

**[8 × 2 = 16]**

- Factorise the following algebraic expression:  
 $12pm + 18qm + 6pn + 9nq$
- A small square is located inside a bigger square as shown in the figure below. The length of one side of the small square is 3 cm and the length of one side of the big square is 7 cm. What is the area of the shaded region?



- Among two congruent angles, one has a measure of  $18^\circ$ , then what would be the measure of the other angle?
  - Two line segments PQ and HG are congruent. What can you say about their lengths?
- Simplify:  $\frac{-32}{9} \div \frac{8}{18}$
- Find the value of  $199^2$  using the formula of the square of a binomial.
- How much water will a tank of length 7.5 m, breadth 2.4 m and height 3 m hold?
- The diagonals AC and BD of the rectangle ABCD intersect at O.
  - If  $l(AC) = 3.6$  cm then  $l(BD) = ?$
  - Find  $l(OB)$  and  $l(OC)$ .

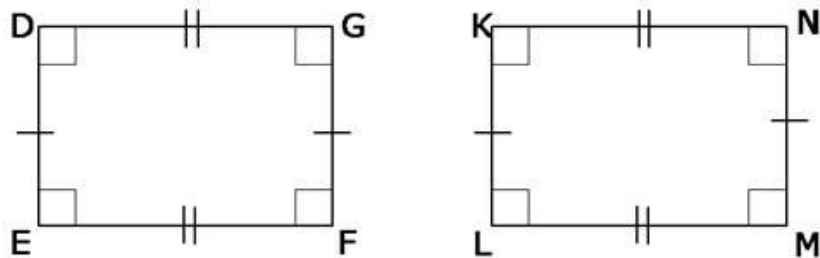


- A finger ring box 6 cm long, 4.5 cm wide and 3.5 cm high is to be covered exactly with gift wrapping paper. How much paper will be required?

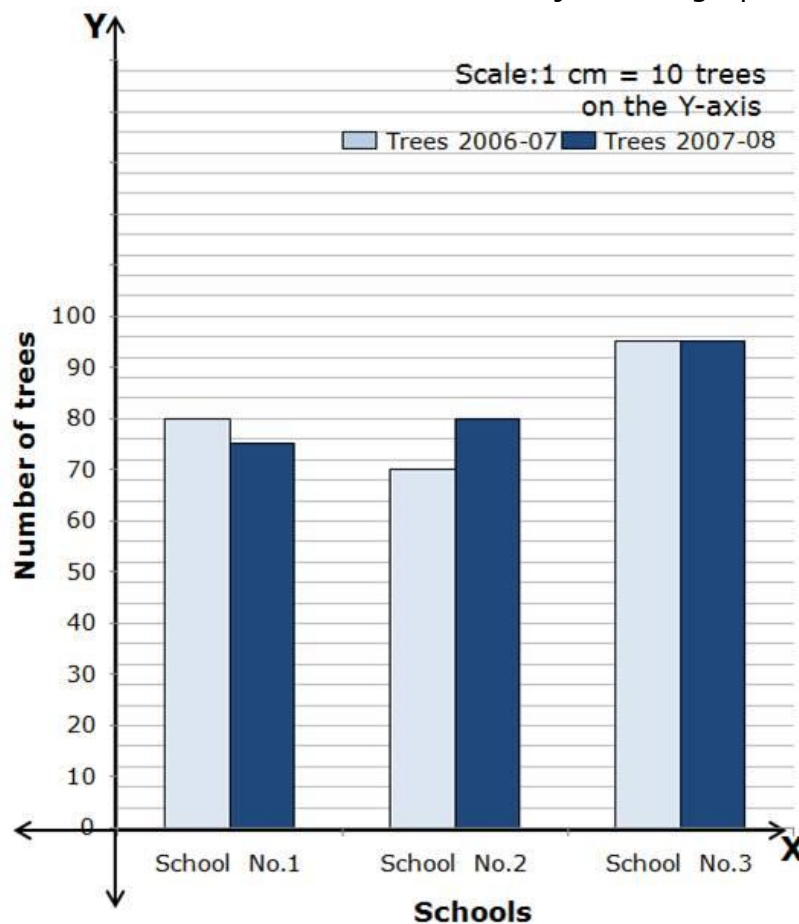
**Q3. Solve the following [Any five]:**

**[5 × 3 =15]**

1. Julie bought a sewing machine for Rs. 2500 and sold it to a customer for Rs. 2700. What was her profit percent?
2. The length of a rectangle is 8 cm and each of its diagonals measures 10 cm. Find its breadth.
3. In the figure below, congruent parts have been shown by identical signs. From the figure,
  - (i) Write two pairs of congruent sides in  $\square DEFG$  and  $\square KLMN$ .
  - (ii) Write two pairs of congruent angles.
  - (iii) Say, giving reasons, whether the statement  $\square DEFG \cong \square KLMN$  is true or false.



4. The number of trees planted by children of three schools in Babhulgaon in the years 2006-07 and 2007-08 is shown in the joint bar graph below:



- (i) Which school planted the same number of trees every year?
  - (ii) Which school planted more trees in 2007-08 than in 2006-07?
  - (iii) Which school planted more trees in 2006-07 than in 2007-08?
5. Use the formula to find the factors of the following:
- (i)  $169p^2 - 81r^2$
  - (ii)  $121 - 49n^2$
6. The floor of a room of 6.6 m length and 4.5 m breadth is to be tiled. How many tiles will be required for this job if each square tile to be used has a side of 30 cm?
7. A classroom is 8 m long, 7 m broad, and 3 m high. If there are 42 children in this class, what is the average volume of air available to each child?

**Q4. Solve the following [Any three]:**

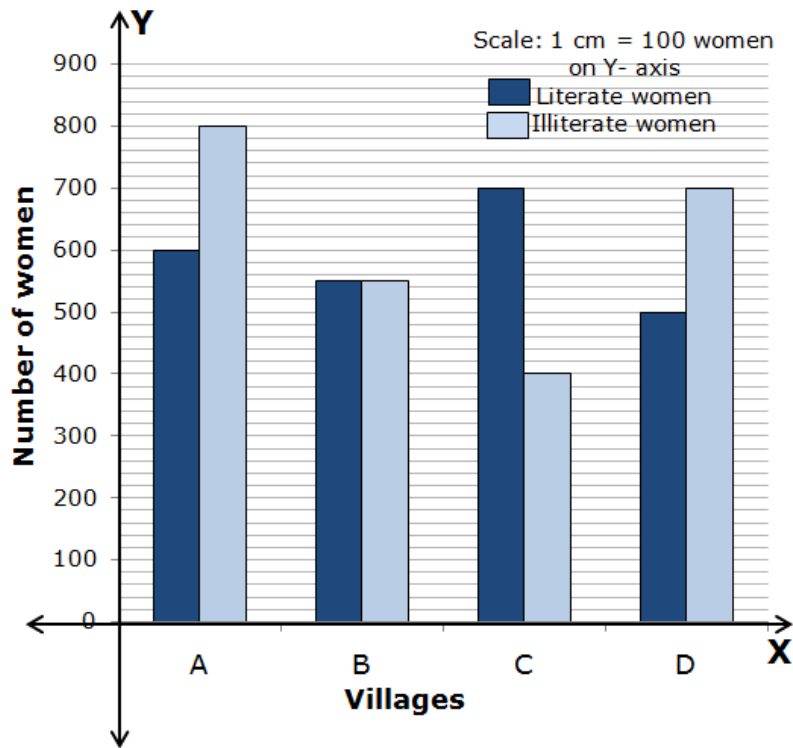
**[3 × 4 = 12]**

1. When Maniklal sold a car for Rs. 3,45,600 he made a profit of 8%. For how much had he bought the car?
2. Are the following statements true or false? Correct the wrong ones and write them again:
  - (i) An angle in a semicircular region is an acute angle.
  - (ii) The angle in a minor segment of a circle is a right angle.
  - (iii) The angle in a major segment of a circle is an obtuse angle.
  - (iv) Angles in the same segment of a circle are congruent.
3. Identify whether the equality  $p(p - 4) = p^2 - 4p$  is an identity by replacing the variable with the values 0, 1, 2, 3.
4. Find the factors of the following:
  - (i)  $am + an + al + bm + bl + bn$
  - (ii)  $ab + cd + ac + bd$
5. Draw a square ABCD having a side of length 5.8 cm.

**Q5. Solve the following [Any one]:**

**[1 × 5 = 5]**

1. The joint bar graph below gives data about four villages, A, B, C and D, regarding their numbers of literate and illiterate women.



Questions:

- In which village is the number of literate women greatest?
  - In which village is the number of literate and illiterate women the same?
  - What is the number of illiterate women in village C?
  - In village D, by how much does the number of illiterate women exceed the number of literate women?
  - In which village is the number of literate women the least?
2. How many bricks of length, breadth and height 20 cm, 12 cm and 7.5 cm respectively will be required to build a wall 4.8 m long, 30 cm thick and 3 m high?