

**CLASS : VII (CBSE)**

**WORKSHEET-1**

**SUBJECT : MATHEMATICS**

**NAME OF THE STUDENT:**

**SEC:**

**ROLL NO.**

**DATE:**

**Perimeter and Area**

**Choose correct option in questions 1 to 4.**

1. Find the area of following triangle:  
 (a)  $6\text{ cm}^2$                       (b)  $5\text{ cm}^2$                       (c)  $4\text{ cm}^2$                       (d)  $3\text{ cm}^2$
2. A door frame of dimensions  $4\text{ m} \times 5\text{ m}$  is fixed on the wall of dimension  $11\text{ m} \times 11\text{ m}$ . Find the total labour charges for painting the wall if the labour charges for painting  $1\text{ m}^2$  of the wall is Rs 2.50.  
 (a) Rs. 200                      (b) Rs. 252.50                      (c) Rs. 300                      (d) Rs. 350
3. What is the circumference of a circle of diameter 10cm?  
 (a) 30 cm                      (b) 35 cm                      (c) 31.4 cm                      (d) none of these
4. Find the breadth of a rectangular plot of land, if its area is  $440\text{ m}^2$  and the length is 22m.  
 (a) 5 m                      (b) 10 m                      (c) 15 m                      (d) 20 m

**Fill in the blanks:**

5. The .....is the distance around a given two-dimensional object.
6. If we cut a square along one of its diagonals, two triangles are obtained. Area of each triangle obtained = .....
7. Length of rectangle = .....
8. State true or false: All triangles equal in area are congruent.
9. A rectangular garden is 66 cm long and 50 cm wide. Two cross paths each 2 m wide are to be constructed parallel to the sides. If these paths pass through the centre of the garden, find the cost of constructing the paths at the rate Rs. 69 per  $\text{m}^2$ .
10. The figure given below, shows two circles with the same centre. The radius of the larger circle is 10 cm and the radius of the smaller circle is 4 cm.  
 Find:  
 (a) the area of the larger circle,  
 (b) the area of the smaller circle,  
 (c) the shaded area between the two circles (Take )
11. A wire is in the shape of a square of side 10 cm. If the wire is bent again into a rectangle of length 12 cm, find its breadth. Which encloses more area - the square or the rectangle?

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**WORKSHEET-2**

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**Comparing quantities**

**Choose correct option in questions 1 to 4.**

1. The cost of one packet of balls having 20 balls is Rs. 100, what will be the cost of 24 such balls.  
 (a) Rs 120                      (b) Rs 100                      (c) Rs 80                      (d) Rs 60
2. The cost of 9 bowls is Rs 72. Find the cost of 6 such bowls.  
 (a) Rs 55                      (b) Rs 48                      (c) Rs 60                      (d) Rs 72
3. Out of 80 students in a class 30 are girls. Find the percentage of girls in class.  
 (a) 32.5%                      (b) 28%                      (c) 37.5%                      (d) none of these
4. What percent of the total distance of 100km is 22km?  
 (a) 88%                      (b) 66%                      (c) 44%                      (d) 22%

**Fill in the blanks:-**

5. To compare two quantities, the units must be the \_\_\_\_\_.
6. If C.P = Rs. x and S.P = Rs. y. Profit % is \_\_\_\_\_. true/false?
7. Find the ratio of  
 (a) 1m to 1 km  
 (b) 1 week of Feb. to Feb. month of a non leap year
8. The loss in a company has decreased from 20 lacs to 5 lacs in one year. Find the loss decrease percentage.

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**WORKSHEET-3**

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**Congruence of Triangles**

**Choose correct option in questions 1 to 4.**

- $\triangle ABC$  and  $\triangle PQR$  are congruent under the correspondence  $ABC \leftrightarrow RQP$   
 Write the parts of  $\triangle ABC$  that correspond to  $RQ$ .  
 (a) AB                      (b) BC                      (c) AC                      (d) none of these
- Which angle is included between the sides DE and EF of  $\triangle DEF$ ?  
 (a)  $\angle D$                       (b)  $\angle E$                       (c)  $\angle F$                       (d) none of these
- By applying SAS congruence rule, you want to establish that  $\triangle PQR \cong \triangle FED$ . It is given that  $PQ = FE$  and  $RP = DF$ . What additional information is needed to establish the congruence?  
 (a)  $\angle P = \angle D$                       (b)  $\angle Q = \angle D$                       (c)  $\angle P = \angle F$                       (d)  $\angle R = \angle F$
- Which congruence criterion do you use in the following?  
**Given:**  $AC = DF$ ,  $AB = DE$ ,  $BC = EF$ . So,  $\triangle ABC \cong \triangle DEF$   
 (a) ASA rule                      (b) SAS rule                      (c) RHS rule                      (d) SSS rule

**Fill in the blanks:**

- If two-line segments have the ..... length, they are congruent.
- If two triangles are congruent, then their ..... parts (i.e., angles and sides) that match one another are eq
- In an isosceles triangle base angles opposite to the equal sides are .....
- The side opposite to the right angle is called the ..... of the right-angled triangle.
- In triangles ABC and PQR,  $AB = 3.5$  cm,  $BC = 7.1$  cm,  $AC = 5$  cm,  $PQ = 7.1$  cm,  $QR = 5$  cm and  $PR = 3.5$  cm. Examine whether the two triangles are congruent or not. If yes, write the congruence relation in symbolic form.
- In the following figure, AB and CD bisect each other at O. State the three pairs of equal parts in two triangles AOC and BOD.

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**WORKSHEET-4**

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**Algebraic Expressions**

**Choose correct option in questions 1 to 4.**

1. Multiply  $2a$  and  $3a$ .  
 (a)  $6a^2$                       (b)  $5a^2$                       (c)  $a^2$                       (d)  $12a^2$
2. Get the algebraic expressions for subtraction of  $z$  from  $y$ .  
 (a)  $y + z$                       (b)  $y - z$                       (c)  $y \times z$                       (d)  $y$
3. Find the value of  $x + 4$  for  $x = 2$ .  
 (a)  $2$                       (b)  $4$                       (c)  $6$                       (d)  $8$
4. Find the product of  $(2x + 3y)(2x + 3y)$ .  
 (a)  $5x^2 + 9y^2 + 12xy$                       (b)  $4x^2 + 7y^2 + 12xy$   
 (c)  $4x^2 + 9y^2 + 13xy$                       (d)  $4x^2 + 9y^2 + 12xy$

**Fill in the blanks:**

5. When terms have the same algebraic factor, they are called .....
6. An expression which contains two unlike terms is called .....
7. A .....can take various values.
8. Simplify these expressions and find their values,if  $x= 3,a= - 1,b= - 2$ .  
 (a)  $3x- 5a - x^2 + 9b$                       (b)  $2b - 8x + 4x^2 + 4a$
9. Simplify combining like terms:  
 (a)  $3a - 2b - ab - (a - b + ab) + 3ab + b - a$   
 (b)  $5x^2y - 5x^2 + 3yx^2 - 3y^2 + x^2 - y^2 + 8xy^2 - 3y^2$
10. What should be taken away from  $3x^2 - 4y^2 + 5xy + 20$  to obtain  $- x^2 - y^2 + 6xy + 20$ ?

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**Symmetry**

1. The angle by which the object rotates is called the \_\_\_\_\_.
2. In a complete turn (of  $360^\circ$ ), the number of times an object looks exactly the same is called \_\_\_\_\_.
3. State true or false: A square has a rotational symmetry of order 4.
4. If a figure has two or more lines of symmetry, should it have rotational symmetry of order more than 1? Give one example.
5. How many lines of symmetry are there in a circle?
6. How many lines of symmetry are there in a regular hexagon?

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**Visualising Solid Shapes**

1. Give two examples of plane figures.
2. Define the net of a solid.
3. Identify the nets which can be used to make cubes.
4. Can this be a net for a die? Explain your answer?
5. A box is in the shape of a cuboid. If its length, breadth and height are 50 cm, 20 cm and 15 cm respectively, find its surface area.
6. How many wooden cubical blocks of edge 12 cm can be cut from another cubical block of wood of edge 3 m and 60 cm?
7. Write the number of faces, edges and vertices in the solids given below.  
(a) Cube    (b) Pyramid
8. Match these two dimensional figures with their names.  
(a) Triangle    (b) Rectangle    (c) Trapezium    (d) Cylinder