

**DELHI PUBLIC SCHOOL  
BOKARO STEEL CITY**

ASSIGNMENT FOR THE SESSION 2009-2010

Class : VII

**Subject : Mathematics**

Assign. No. 3

1. AD, BE and CF, the altitudes of  $\Delta ABC$  are equal. Prove that  $\Delta ABC$  is an equilateral triangle.
2. If  $\Delta ABC$  is an isosceles triangle such that  $AB=AC$ , then altitude AD from A to BC bisects BC.
3. A tree is broken at a height of 5m from the ground and its top touches ground at distance of 12 m from the base of the tree. Find the original height of the tree.
4. Is it possible to have a triangle with the following sides:
  - i) 2cm, 3 cm, 5 cm
  - ii) 3cm, 6cm, 7cm
5. ABCD is a quadrilateral. Is  $AB + BC + CD + DA > AC + BD$ ?
6. Construct a  $\Delta ABC$  such that  $AB=2.5\text{cm}$ ,  $BC= 6 \text{ cm}$  and  $AC=6.5\text{cm}$ . Measure angle B.
7. Draw  $\Delta ABC$  in which  $BC=4\text{cm}$ ,  $AB= 3\text{cm}$  and  $\angle B=45^\circ$ . Also, draw a perpendicular from A on BC.
8. Draw a  $\Delta ABC$  with  $\angle C$  a right angle,  $AB = 6.2\text{cm}$  and  $BC=4.5\text{cm}$ .
9. Construct a right angled triangle ABC in which  $AB= 5.8 \text{ cm}$ ,  $BC= 4.5 \text{ cm}$  and  $\angle C=90^\circ$ .
10. Construct  $\Delta ABC$  in which  $AB=6.4\text{cm}$ ,  $\angle A = 45^\circ$ . And  $\angle B = 60^\circ$ .
11. A lawyer willed his three sons Rs. 250000 to be divided into portions 30%, 45% and 25%. How much did each of them inherit?
12. In a stock clearance sale, liberty shoe company reduces the prices by 16%, if the reduced price of a pair of shoes be Rs.277.20, Find its original price
13. A local cricket team play 20 matches in one season. It won 25% of them. How many matches did they win.
14. Arun bought a car for Rs.350000. The next year, The price went up to Rs.370000. What was the % of price increase?
15. In India, 14 Women members of the Parliament were elected in 1977 and in 1979 this number was 26. Find the increased percent of women members of the Parliament from 1977 to 1979.
16. A grain merchant sold 600 quintals of rice at a profit of 7%. If a quintal of rice cost him Rs. 250 and his total overhead charges for transportation etc, were Rs1000. Find his total profit and the selling price of 600 quintals of rice.
17. A woman bought 50 dozen eggs at Rs.6.40 a dozen. Out of these 20 eggs were found to be broken. She sold the remaining eggs at 55 paise per egg. Find her gain or loss percent.
18. Ravi purchased a house for Rs.45200 and spent Rs.2800 its repairs. He had to sell it for Rs.46800. Find his loss and loss percent.
19. State the number of Lines of symmetry for the following figure:
  - i) An equilateral triangle.
  - ii) A Scalene triangle.
  - iii) A rhombus
  - iv) A Parallelogram
  - v) An isosceles triangle
20. Discuss the rotational symmetry and line of symmetry of a circle.
21. Give two examples from our daily life which are in the form of
  - i) A cone
  - ii) A cuboid
  - iii) A cylinder
  - iv) A sphere

22. A rectangular field is measured 290m by 210 m. How long will it take for a girl to go two times round the field, if she walks at the rate of 1.5m/s?
23. A wire is in the shape of a rectangle. Its length is 40cm and breadth is 22cm. If the same wire is bent in the shape of a square, what will be the measure of each side? Also find which side encloses more area?
24. The radius of one circular field is 5m and that of the other is 13m. Find the radius of circular field whose area is the difference of the areas of first and second field.
25. The mean of five numbers is 18. If one number is excluded, their mean is 16. Find the excluded number.
26. Find the mode and median of the following:  
12,14,12,16,15,13,14,18,19,12,14,15,16,15,16,16,15,17,13,16,16,15,15,13,15,17,15,14,15,13,15,14.
27. Organize the following grades in a class assessment in a tabular form:  
4,6,7,5,3,5,4,5,8,6,2,5,1,9,6,7,8,4,6,7  
Find the arithmetic mean of grades. Also, Find the range of the data
28. The weights (in kg) of 15 students are: 31,35,27,29,32,43,37,41,34,28,36,44,45,42,30. Find the median. If the weight 44 kg is replaced by 46 kg and 27 kg by 25 kg, find the new median.
29. Find the mode of the following data:  
12,14,16,12,14,14,16,14,10,14,18,14.
30. The population of four major cities in India in a particular year is given below:

City	Mumbai	Kolkata	Delhi	Chennai
No. of student	120	130	150	80

Construct a bar graph to represent the above data.

31. A road which is 7m wide surrounds a circular park whose circumference is 352m, Find the area of road.
32. Find the area of a circle of diameter 14cm.
33. Find the area of a rectangular field in hectares whose sides are:  
i) 125m and 400m ii) 75m 5dm and 120m.
34. If  $x:y=8:9$ ; Find the ratio  $(7x-4y):(3x+2y)$
35. The ratio of monthly income to the savings of a family is 7:4. If the savings be of Rs.500. Find the income and expenditure.
36. Find the following :  
i) 6 is 30% of which number?  
ii) 12 is 25% of which number?
37. By selling an article for Rs.240, a man makes a profit of 20%. What is his C.P? What would his profit % be, if he sold the article for Rs.275?
38. Anita deposits Rs.1000 in a saving bank account. The bank pays interest at the rate of 5 % per annum. What amount can Anita get after one year?
39. If Meena gives an interest of Rs. 45 for one year at 9 % rate per annum, what is the sum she has borrowed?
40. In how many years will Rs 750 amount to Rs 900 at 4 % per annum?

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