ARCHITA EDUCENTER

CLASS-IX MOCK-TEST-2

1. If $2 \cos \theta = \sqrt{3}$, prove that $3 \sin\theta - 4 \sin^3\theta = 1$.

2. If $\sec\theta - \tan\theta / \sec\theta + \tan\theta = 1/4$, find $\sin\theta$.

3. If $\sin \theta + \cosec \theta = 3\ 1/3$, find the value of $\sin^2\theta + \cosec^2 \theta$.

4. Find the value of : sec30 degree tan60 degree + sin45 degree cosec45degree + cos30 degree cot60 degree.

5. If tan (A+B)=$\sqrt{3}$, tan (A-B)=1 and A,B(B $<$ A) are acute angles, find the values of A and B.

6. On what sum will the compound interest for 2 years at 4% per annum be Rs.5712?

7. In what time will Rs, 15625 amount to Rs.17576 at 4% per annum compound interest?

8. Find the difference between the simple interest and compound interest on Rs.2500 for 2 years at 4% per annum, compound interest being reckoned semi-annually.

9. Solve the following systems of simultaneous linear equations by cross-multiplication method: 3x -7y+10=0

$\qquad$ Y – 2x =3.

10. A boat goes 30 km upstream and 44 km downstream in 10 hours. In 13hours it goes 40km upstream and 55 km downstream. Determine the speed of the stream and that of the boat in still water.

11. The taxi charges in a city consist of a fixed charge together with the charge for the distance covered. For a distance of 10km, the charge paid is Rs.105 and for a journey of 15km, the charge paid is Rs. 155. What are the fixed charges and the

charge per km? how much does a person have to pay for travelling a distance of 25 km?

12. If the numerator and denominator of a fraction are increased by 2 and 1 respectively, it becomes ¾. If the numerator and denominator are decreased by 2 and 1 respectively, it becomes ½. Find the fraction.

13. A cuboid has length, breadth and diagonal as 4m,3m and 13m respectively. Find its volume.

14. A solid piece of metal, cuboidal in shape, with dimensions 24cm, 18 cm and 4cm is recast into a cube. Calculate the lateral surface area of the cube.

15. The volume of a cube is 729 cm^3. Find its surface area and the length of a diagonal .

16. Three cubes whose edges are x cm,8cm and 10cm respectively are melted and recast into a single cube of edge 12cm. find x.

17. If the area of a circle is 78.5cm^2, find its circumference. (Take π=3.14).

18. The lateral surface area of a cuboid is 224cm^2. Its height is 7cm and base is a square. Find (i) a side of the square, and (ii) the volume of the cuboid.

19. Two circles touch externally. The sum of their areas is 58π $cm^2$and the distance between their centres is 10cm. find the radii of the two circles.

20. Area of a triangle is 30cm^2.if its base is 10cm, then its height is-