SET – 1

INDIAN SCHOOL SOHAR
FORMATIVE ASSESSMENT- 2
MATHEMATICS

Date: 25-08-2013 Time: 45 min.
Class: X Marks: 25

General Instructions:

- All questions are compulsory.
- Q.No.1 to Q.No.3 are multiple choice questions, carry 1 mark each.
- Q.No.4 to Q.No.7 carry 2 marks each, Q.No.8 to Q.No.9 carry 3 marks each.
- Q.No.10 to Q.No.11 carry 4 marks each.

1. In Δ ABC, if DE||BC, AD = x cm, DB = (6-x) cm, AE = 10cm, EC=14cm, find AD.

(a) 2.5cm (b) 5cm (c) 3.5cm (d) 2cm

2. $9\cot^2 A - 9\operatorname{cosec}^2 A =$ _____.

(a) 1 (b) -1 (c) 9 (d) -9

3. Sides of two similar triangles are in the ratio 4:9.Areas of these triangles are in the ratio

(a) 4:9 (b) 2:3 (c) 81:16 (d) 16:81

4. ABCD is a trapezium in which AB||DC and its diagonals intersect each other at the point O. Show that $\frac{AO}{BO} = \frac{CO}{DO}$.

5. A vertical pole of length 6m casts a shadow 4m long on the ground and at the same time a tower casts a shadow 28m long. Find the height of the tower.

6. If 15 cot A = 8, find the value of sec A.

7. If $\tan 2A = \cot(A - 18^0)$, where 2A is an acute angle, find the value of A.

8. D is a point on the side BC of a triangle ABC such that $\angle ADC = \angle BAC$. Show that $CA^2 = CB.CD$

9. Evaluate $\frac{\cos^2 20^0 + \cos^2 70^0}{\sec^2 50^0 - \cot^2 40^0} + 2\operatorname{cosec}^2 58^0 - 2\cot 58^0 \tan 32^0 - 4\tan 13^0 \tan 77^0 \tan 45^0$

10. In a right triangle, prove that the square of the hypotenuse is equal to the sum of the squares of the other two sides.

11. Prove the identity, $\frac{\sin\theta - \cos\theta + 1}{\sin\theta + \cos\theta - 1} = \frac{1}{\sec\theta - \tan\theta}$

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