Guess Paper – 2009

Class – X

Mathematics

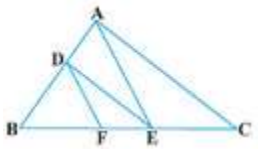
Time: 3 hrs **Marks: 80**

General Instructions:

- *All questions are compulsory.*
- *The question paper is of **30** questions divided into four sections –A, B, C and D. Section A contains **10** questions of **1** marks each. Section B is of **5** questions of **2** marks each , section C is of **10** questions of **3** marks each and Section D is of **5**questions of **6** marks.*
- *There is no overall choice.*
- *In question on construction, the drawing should be neat and exactly as per the given measurements.*
- *Use of calculator is not permitted.*
- *No credit will be given for cutting, scribbling in section A*

1. Let $\Delta ABC \sim \Delta DEF$ and their areas be, respectively, 64 cm^2 and 121 cm^2. If EF = 15.4 cm, find BC. (2)

Q. 2. In Fig., DE || AC and DF || AE. Prove that BF/EF = BE/EC (2)

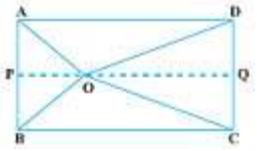


Q. 3. ABC is an isosceles triangle right angled at C. Prove that $AB^2 = 2AC^2$ (2)

Q. 4. Prove that the tangents drawn from the external point to the circles are equal. (2)

Q. 5. In an equilateral triangle ABC, D is a point on side BC such that BD =1/3 BC. Prove that, 9 AD^2 = 7 AB^2. (3)

Q. 6. O is any point inside a rectangle ABCD



(see Fig).

Prove that $OB^2 + OD^2 = OA^2 + OC^2$. (3)

Q. 7. If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio. (4)

Q. 8. In a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides (Pythagoras Theorem). (4)

Q. 9. The ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides. Prove this.(4)

Q. 10. Prove, In a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides (Pythagoras Theorem). (4)