MATHEMATICS

1.If X+3Y-Z=4, 3X+3Y+Z=12, $(X+3Y)^2 = Z^2 = 36$ then the value of x = …….

1) 3/2
2) 1/3
3) 3
4) 5

2. If the roots of quadratic equation $x^2+ px+ q = 0$ and Tan 30° and Tan15° respectively, then the value of 2+q-p=……

1) 3

2) 4

3) -1

4) -2

3. If 30,72 and x are three integers, such that the product of any two of them is divisible by the third, then the least value of x is

1) 45

2) 60

3) 48

4) 24

4. Let a b, and c be real numbers, such that a -7b + 8c = 4 and 8a + 4b -c= 7 then the value of $a^2 – b^2 + c^2$ = ...

1) -1

2) 4

3) -2

4) 1

5. The roots of $x^3 + 3x^3 + 4x -11 =0$ a, b and c and that the roots of $x^3 + rx^2 + sx + l = 0$ are a + b, b+ c and c + a, then the value of t = ….

1) 18

2) 23

3) 15

4) -17

6. **Product of two roots $x^4 + 11x^3 + kx^2 + 269x - 2001$ is -69, then the value of k = ….**

1) 5

2) -7

3) -10

4) 8

7. **In triangle ABC, AC = 3AB, let AD bisect angle A with D lying on BC and let E be the foot of the perpendicular from C to AD. Then area of ABD /area of CDE Δ =….**

1)2

2) 1/3

3) 1/4

4) 2/ 3

8. **3 sides of triangle are consecutive integers and the largest angle is twice the smallest angle. The perimeter of triangle is ……**

1) 15 units

2)10 units

3) 12 units

4) 16 units

9. **In a triangle ABC, D is the mid-point of AB, E is the mid-point of DB and F is the mid-point of BC. If the area of ΔABC is 96, then the area of ΔAEF is ….**

1) 16

2) 24

3) 32

4) 36

10. **A four-digit number has the following properties**

i) It is a perfect square

ii) Its first two digits are equal to each other

iii) Its last two digits are equal to each other

Then the four-digit number is ….

1) 5566

2) 7744

3) 2288

4) 3399