Sample Paper – 2012 Class – IX Subject – Mathematics

M.M 60 **Time: 2 ½ hrs**

SECTION-A

1. Which of the following is not an irrational number?

a) √625 b)√3 c)√23 d)√29

2. The decimal representation of 8/3 is

a) 2.66…. b)2.6 c)2.67 d)2.7

3. The coefficient of y^2 in $y+\pi y^2+8y^3$ is

a)1 b)π c)π/2 d)8

4. If $p(y)=y^3-3y^2-7y+2$ then p(1) =

a) 2 b)-7 c)1 d)None of These

5.It is known that if x+y=10 then x+y+z=10+z.The Euclid's Axiom that illustrates this statement is

a)First Axiom b)Second Axiom c)Third Axiom d)Fourth Axiom

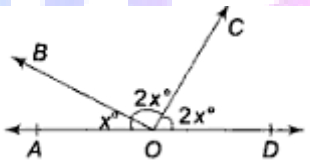
6. Boundary of Solids are

a) surfaces b)Points c)Lines d)Curves

7.The difference between two complementary angles is 40^0. The Angles are-

a)$25^0,65^0$ b)$20^0,60^0$ c)$40^0,40^0$ d)None of These

8.Value of x in the given figure



a)30^0 b)180^0 c)36^0 d)45^0

9.The co-ordinates of a point which is on left of y-axis and on x-axis at a distance of 4 units

a)(4,0) b)(-4,0) c)(0,-4) d(0,4)

10. The quadrant in which point (-3,3) lie

a)I b)II c)III d)IV

SECTION-B

11.Express 17.4848 as rational number.

12.Show that x=1 is the zero of $f(x)=2x^3-3x^2+7x-6$.

OR

Verify r=-1,2 are the zeros of p(r)=(r+1)(r-2).

13.Prove that every line segment has one and only one mid point.

14. Rationalise the denominator of each of the following $\frac{1}{\sqrt{3}+\sqrt{2}-\sqrt{5}}$

15.In the given figure, OA and OB are two opposite rays.Find the value of x and also angles BOD,COD and AOC.

16.Represent √3 on number line.

SECTION-C

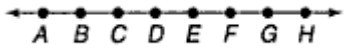
17.Prove that √7 is irrational.

18.Find the remainder when x^3-ax^2+6x-a is divided by x-a.

OR

Use Factor Theorem to determine whether (x+5) is a factor $x^3+x^2+3x+175$.

19.Look at the figure and show that length AH>sum of lengths of AB+BC+CD



.

20.Plot the following ordered pairs of numbers(x,y) as points in the cartesian plane.Use the scale 1 cm=1 unit on the axes.

x	−2	0	1	2	−3	+2
y	5	3.5	3	2	−4	−2

21.If two parallel lines are intersected by a transversal,Show that the bisectors of any pair of alternate interior angles are parallel.

22.Rationalize the denominator of the following $\frac{1}{\sqrt{5}+\sqrt{2}}$

SECTION-D

23.Simplify The following Expression

$$\frac{3\sqrt{2}}{\sqrt{6}+\sqrt{3}}+\frac{\sqrt{6}}{\sqrt{2}+\sqrt{3}}-\frac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}}$$

OR Find the values of a and b $\frac{\sqrt{2}+\sqrt{3}}{3\sqrt{2}-2\sqrt{3}} = a-b\sqrt{6}$

24.Find the area of the figure enclosed by the points (-2,2),(2,-2),(2,2) and (-2,2) Using Graph.

25.Evaluate 103 x 107 and factorize $1-p^6$.

26. If $x=\frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}$ and $y=\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}$, find the value of x^2+y^2-6xy

OR

If $x=6-\sqrt{35}$, find $x^2+\frac{1}{x^2}$

27 What must be subtracted from $4x^4-2x^3-6x^2+x-5$, so that the result is exactly divisible by $2x^2+x-2$?