MM 80 **Summative Assessment I class IX** **Time 3h**

General Instructions:

1. *Please check the number of pages.*
2. *Attach this sheet to your answer paper.*
3. *Follow the instructions & read the questions carefully before answering them.*
4. *All questions are compulsory.*
5. *The question paper consists of 34 questions divided into four sections – A, B, C& D. Section-A contains 8 multiple choice questions of 1 mark each and 4 multiple choice questions of 2 marks each, Section-B is of 7 questions of 2 marks each, Section-C is of 10 questions of 3 marks each and Section-D is of 5 questions of 4 marks each*
6. *In question on construction, the drawing should be neat and exactly as per the given measurements.*
7. *Check your answers before handing over the paper to the invigilator.*
8. *Any kind of malpractice will be seriously dealt with*

Section A 1 mark each

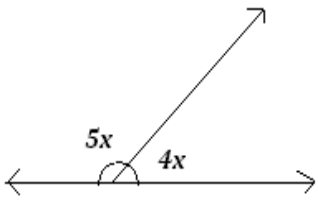
1. An irrational number between $\frac{3}{2}$ and 2 is

a) 1.73 b) $\sqrt{3}$ c) $\sqrt{2}$ d) π.

2. For the polynomial $p(x) = 2x^2-5x$, which one is correct

a) Binomial, degree 2 b) Monomial, degree 2

c) Trinomial, degree 1 d) Binomial, degree 3.



3. The value of x in given fig. is

a) 80^0 b) 20^0 c) 40^0 d) 60^0.

4. Which of the following is not a criterion for congruence of triangles?

a) SAS b) ASA c) ASS d) AAS.

5. Evaluate: $(3 + \sqrt{3})(3 - \sqrt{3})$

a) 7 b) 2 c) $(3-\sqrt{3})$ d) 6.

6. The value of $249^2 - 248^2$ is

a) 1 b) 477 c) 487 d) 497.

7. The supplementary angle of 66^0 is

a) 14^0 b) 24^0 c) 94^0 d) 114^0.

8. The remainder when $p(x)= 4x^3 - 12x^2 + 14x - 3$ divided by $x - ½$ is.

a) 3/2 b) 0 c) 15/2 d) 1.

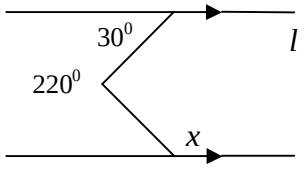
Section B 2 marks each (MCQ)

9. $\frac{(\sqrt{7}-\sqrt{2})}{5}$ will be equal to

a) $\frac{5}{(\sqrt{7}-\sqrt{2})}$ b) $\frac{(\sqrt{7}-\sqrt{2})}{5}$ c) $\frac{(\sqrt{7}+\sqrt{2})}{5}$ d) $(\sqrt{7}-\sqrt{2})$

10. Find the value of 'k', if (x-2) is a factor of $3x^3 + 4x^2 - 5x - 5k$.

a) 2 b) -2 c) 6 d) 5.

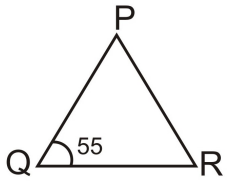


11. In the given fig. if $l \parallel m$ then x equals to

a) 70º b) 90º c) 50º d) 30º.

12. In figure PQR is an isosceles triangle in which QR=QP and $\angle Q=55$. Then Find $\angle P$?

a) 57.5^0 b) 125^0 c) 62.5^0 d) 115^0.



Section B 2 marks each

13. Represent $\sqrt{5}$ on number line.

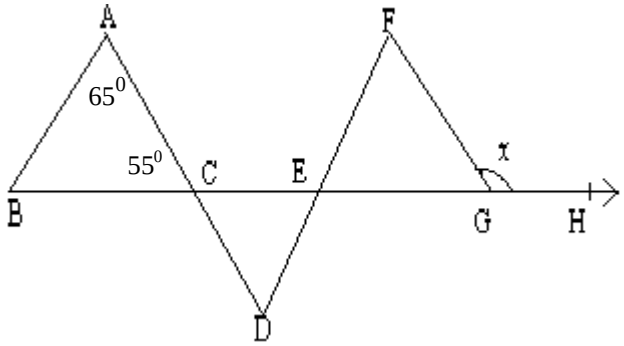
14. Evaluate: $(x-a)^3 + (x-b)^3 + (x-c)^3 - 3(x-a)(x-b)(x-c)$; where $3x = a + b + c$.

15. In which quadrant the following points lie:

1. (4,2) 2. (-3,5) 3. (-2,-5) 4. (4,-2).

16. Write any two Euclid's postulate.

17. In fig. If BA||DF, AD||FG, $\angle BAC=65^0$ and $\angle ACB= 55^0$,then find $\angle FGH$



18. Express 0.123 in the form of p/q , where p, q in Z, $q \neq 0$.

19. Factorize: $a^6 - 1$.

Section C 3 marks each

20. Find the value of x and y if,

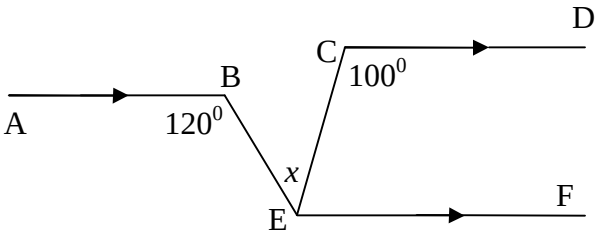
$$\frac{(7+\sqrt{5})}{(7-\sqrt{5})} - \frac{(7-\sqrt{5})}{(7-\sqrt{5})} = x + \frac{7}{11}\sqrt{5}y.$$

21. If a + b + c = 5 and ab + bc + ca = 10, then prove that $a^3 + b^3 + c^3 - 3abc = -25$.

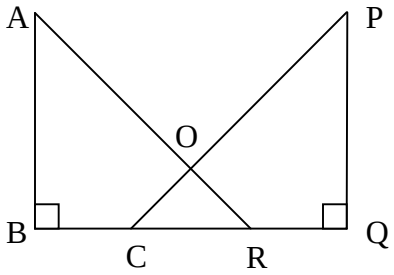
22. Plot the following points on the graph paper.

1. (2,5) 2. (4,-5) 3. (0,7) 4. (-5,-2) 5. (7,0).

23. In the given figure AB ∥ CD and CD ∥ EF. Find the value of x?

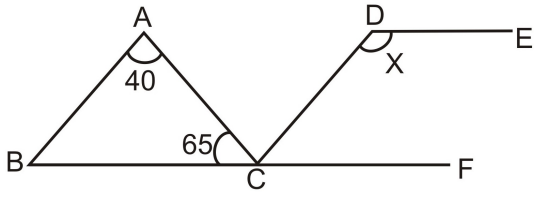


24. In figure AB= PQ, BC= RQ, AB ⊥ BQ and PQ ⊥ BQ. Prove that ▲ABR ≅ ▲PQC.

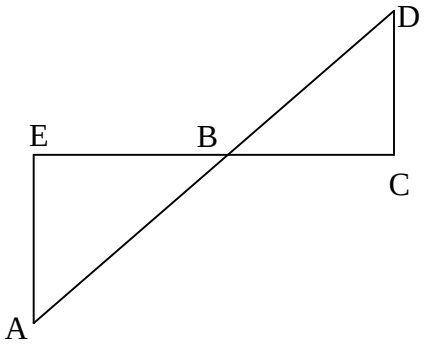


25. Find the values of 'a' and 'b' so that the polynomial $x^3 - ax^2 - 13x + b$ has (x-1) and (x+3) are factors.

26. In a given fig. find the value of 'x', if AB ∥ DC & DE ∥ BF



27. In fig. $\angle E > \angle A$ and $\angle C > \angle D$. Prove that AD > EC.



28. A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30 m and its longer diagonal is 48 m, how much area of grass field will each cow be grazing?

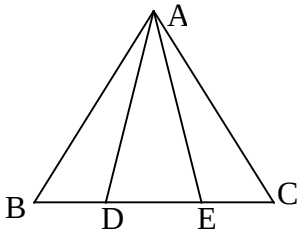
29. Evaluate the following with suitable identity:

1) 105^3 2) 999^3.

Section D 4 marks each

30. Bisectors of angles B and C of a triangle ABC intersect each other at the point O. Prove that $\angle BOC = 90^0 + \frac{1}{2} \angle A$.

31. a). In the figure, D and E are points on side BC of a ▲ABC such that BD = CE and AD = AE. Show that ▲ABD ≅ ▲ACE .



b). Show that each angle of an equilateral triangle is 60^0.

32. Simplify:

a). $(27)^{\frac{-1}{3}}(27)^{\frac{-1}{3}}\left[(27)^{\frac{1}{3}}-(27)^{\frac{2}{3}}\right]$

b). $\dfrac{(36)^{\frac{7}{2}}-(36)^{\frac{9}{2}}}{(36)^{\frac{5}{2}}}$

33. Verify that $x^3 + y^3 + z^3 - 3xyz = \frac{1}{2}(x+y+z)[(x-y)^2+(y-z)^2+(z-x)^2]$ and hence find the value of $(27)^3+(-14)^3+(-13)^3$.

34. In an isosceles triangle ABC, with AB = AC, the bisectors of $\angle B$ and $\angle C$ intersect each other at O. Show that:

1) OB = OC 2) AO bisects $\angle A$.

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