Class 9 Mathematics - Sample Paper Set II


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Time allowed: **3 hours;** Maximum marks: **90**

General Instructions:

   a) All Questions are compulsory
   b) The Question Paper consists of 31 Questions divided in to four sections A, B, C and D
   c) Section- A comprises of 4 questions of one mark each
   d) Section- B comprises of 6 questions of two mark each
   e) Section- C comprises of 10 questions of three mark each
   f) Section- D comprises of 11 questions of Four mark each
   g) The use of calculator is not permitted.

Section–A

1. If $125^x = \frac{25}{5^x}$, then find the value of x?

2. Determine the degree of the polynomial: $4y^5 + 4y^2 - 4y - 4$?

3. In the given figure, find x, if AOB is a straight line:
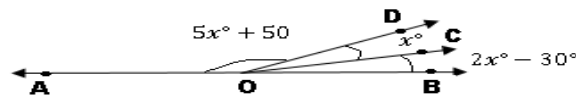
4. "There are an infinite number of lines which passes through two distinct points". This statement is true or false? Give reasons for your answers?
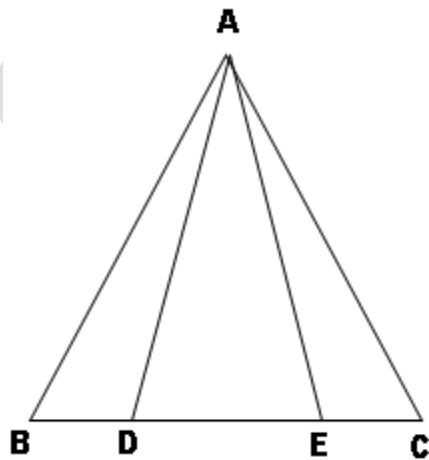
Section - B

5. Is zero (0) a rational number? Justify your answer?

6. Factorize: $x^3 - 23x^2 + 142x - 120$, using Factor Theorem?

7. Prove that two distinct lines cannot have more than one point in common?

8. If the area of an equilateral triangle is : $\sqrt[16]{3}cm^2$. Find the perimeter of the triangle?

9. Plot the points A(2, -2) and B(-4, 4) on the Cartesian plane and join them using a line segment. Does the line segment pass through origin?

10. In the given figure, AC= BD, Prove that AB=CD?

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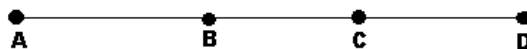
Section –C

11. Simplify the expression: $\frac{2\sqrt{30}}{\sqrt{6}} - \frac{3\sqrt{140}}{\sqrt{28}} + \frac{\sqrt{55}}{\sqrt{99}}$?

12. Locate $\sqrt{13}$ on the number line?

13. The polynomial $ax^3 + bx^2 + x - 6$ has (x+2) as a factor and leaves a remainder 4, when divided by (x-2). Find a and b?

14. Simplify: $(2x + p - c)^2 - (2x - p + c)^2$?

15. On a graph paper, plot a point A (-2,-2). Reflect point A in x-axis and y-axis. Let these points be B and C respectively. Guess the measure of $\angle BAC$?

16. Plot the points (0,4), (-2,0) and (2,0) in the rectangular co-ordinate system. Join them and mention which geometrical figure you obtain?

17. Find the area of a quadrilateral field ABCD in which AB =50cm, BC=18cm, CD=82cm, DA=50cm and $\angle CBD = 90°$?

18. State any three Euclid's Axioms?

19. In the given figure, triangle ABC is an isosceles with AB=AC, D and E are points on BC such that BE=CD. Show that AD=AE?

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20. In the given figure, OP||RS. If $\angle OPQ = 110°$ and $\angle SRQ = 130°$, find $\angle PQR$?
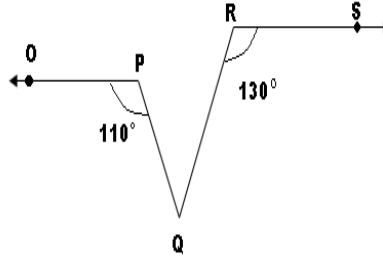
Section–D

21. Simplify: $\dfrac{\sqrt[2]{6}}{\sqrt{2}+\sqrt{3}} + \dfrac{\sqrt[6]{2}}{\sqrt{6}+\sqrt{3}} - \dfrac{\sqrt[8]{3}}{\sqrt{6}+\sqrt{2}}$?

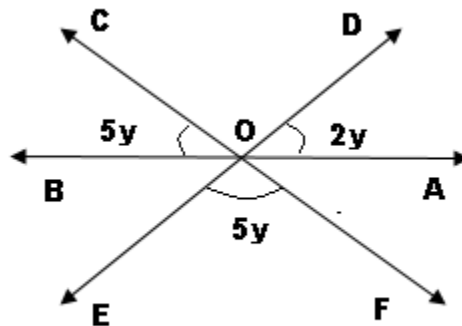22. Express $0.6 + 0.\overline{7} + 0.4\overline{7}$ in the form $\dfrac{p}{q}$ where p and q are integers and q$\neq$ 0?

23. Factorize: $x^{12} - 1$?

24. If $p(x) = x^2 - 4x + 3$, then find the value of p(2)-p(-1)+p($\frac{1}{2}$)?

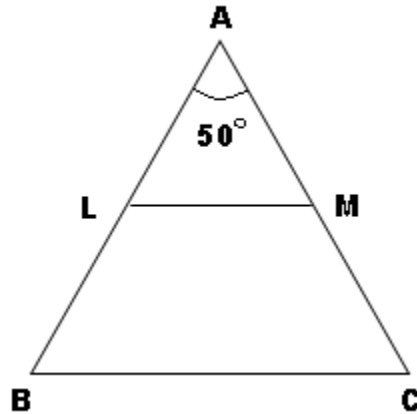25. Prove that sum of the angles of a triangle is 180°?

26. T is a point on the side QR of $\triangle$PQR and S is an exterior point such that RT=ST. Prove that PQ+PR>QS?

27. In the given figure, determine the value of y and hence find $\angle EOB, \angle FOA$ and $\angle COD$?

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28. In the figure, ABC is an isosceles triangle in which AB=AC and LM is parallel to BC. If $\angle A = 50°$, find $\angle LMC$?

29. What is CPCT? Mention any three criteria for congruence of triangles?

30. State Euclid's fifth postulate. Rewrite it in your own words, so that it would be easier to understand?

31. Prove that the angles opposite to equal sides of a triangle are equal?

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