

Guess Paper – 2014
Class – IX
Subject – Mathematics

Section- A

1. Decimal representation of $1/9$ is (a) $0.\bar{2}$ (b) $0.0\bar{2}$ (c) $0.2\bar{1}$ (d) $0.\bar{1}$
2. If $p(x) = 4x^2 + 3x + 7/2$, then the value of $p(-3/2)$ is equal to: (a) 2 (b) 4 (c) 6 (d) 8.
3. If $x^3 + 3x^2 + 3x + 1$ is divided by $x + 1$, the remainder is: (a) 1 (b) 0 (c) -1 (d) 2.
4. The value of $p(x) = 3x^2 - 1$ at $x = -\frac{1}{\sqrt{3}}$ is (a) -2 (b) 2 (c) -1 (d) 0.
5. In the given figure, if $\angle AOC + \angle BOD = 70^\circ$, then $\angle COD$ is: (a) 80° (b) 90° (c) 110° (d) 120°
6. Two sides of a triangle are 8 cm and 3 cm. Third side of the triangle cannot be : (a) 4 cm (b) 6 cm (c) 5.5 cm (d) 6.5 cm.
7. The perimeter of a triangle is 30cm. If its sides are in the ratio 1:3:2 then its smallest side is: (a) 1cm (b) 5cm (c) 10cm (d) 15cm.
8. The area of an equilateral triangle whose sides are 6cm. (a) $6\sqrt{3}\text{cm}^2$ (b) $9\sqrt{3}\text{cm}^2$ (c) $12\sqrt{3}\text{cm}^2$ (d) $15\sqrt{3}\text{cm}^2$.

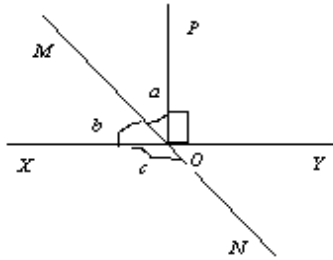
Section-B

9. Find two irrational numbers between 3 and 4.

10. Simplify $\left(\frac{243}{32}\right)^{-\frac{3}{5}}$.

11. If $2a + 3b = 13$ and $ab = 6$, find the value of $8a^3 + 27b^3$.

12. In the given figure, line XY and MN intersect at O. If $\angle POY = 90^\circ$ and $a : b = 4 : 5$, find c.



13. State five postulates of Euclid

14. Write the coordinate point (i) below x-axis, lying on y axis at a distance of 5 units (ii) lying on x-axis to the left of origin at a distance of 6 units.

Section-C

15. Simplify $\frac{3\sqrt{2} - 2\sqrt{3}}{3\sqrt{2} + 2\sqrt{3}} + \frac{\sqrt{12}}{\sqrt{3} - \sqrt{2}}$

16. Represent $\sqrt{4.8}$ on the number line.

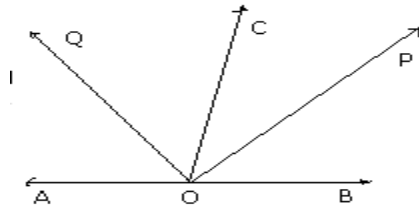
17. Factorize $a^3 - 3a^2 + 3a + 7$.

18. In If $\left(x^4 + \frac{1}{x^4}\right) = 119$ find the value of $\left(x^3 - \frac{1}{x^3}\right)$

OR

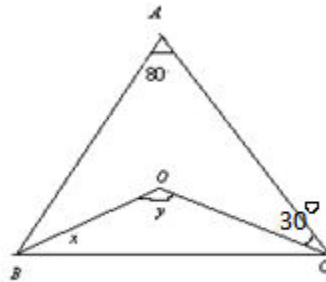
Factorise $(x^2 - y^2)^3 + (y^2 - z^2)^3 + (z^2 - x^2)^3$

19. In the given figure, OP bisects $\angle BOC$ and OQ bisects $\angle AOC$, show that $\angle POQ = 90^\circ$

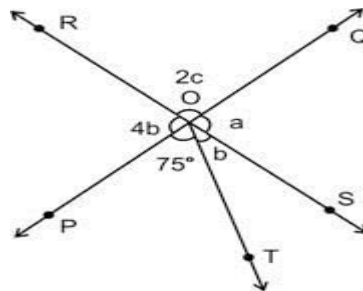


20. Prove that medians bisecting the equal sides of an isosceles triangle are also equal. **OR** If two parallel lines are intersected by a transversal, show that the bisectors of any pair of alternate interior angles are parallel.

21. In the given figure, OB and OC are bisectors of $\angle B$ and $\angle C$, find x and y .



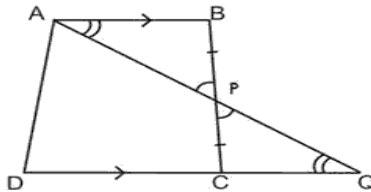
22. In Figure two straight lines PQ and RS intersect each other at O. If $\angle POT = 75^\circ$, find the values of a, b and c .



23. In the given figure, ABCD is a quadrilateral in which $AB \parallel DC$ and P is the midpoint of BC. On producing, AP and DC meet at Q.

Prove that

(i) $AB = CQ$, (ii) $DQ = DC + AB$.



24. The sides of a triangle are in the ratio of 13 : 14 : 15 and its perimeter is 84 cm. Find the area of the triangle. Also find the altitude of the triangle corresponding to the longest side.

Section-D

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

OR

If $x = \frac{1}{2 - \sqrt{3}}$, find the value of $x^3 - 2x^2 - 7x + 5$

26. Find the values of a and b if $\frac{2\sqrt{6} - \sqrt{5}}{\sqrt{45} - \sqrt{24}} = a + b\sqrt{30}$.

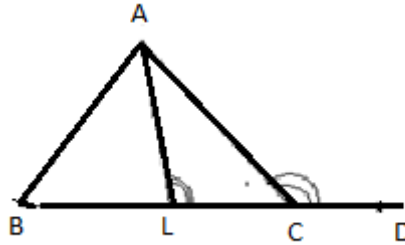
27. If $f(x) = x^4 - 2x^3 + 3x^2 - ax + b$ is divided by $(x-1)$ and $(x+1)$ the remainders are 5 and 19. Determine the remainder when $f(x)$ is divided by $(x-2)$.

OR Evaluate 103×107 and factorize $1 - p^6$.

28. Using the factor theorem, factorize the polynomial $x^4 + 2x^3 - 13x^2 - 14x + 24$.

29. Factorize: $8x^4 + 2x^2 - 1$.

30. Side BC of a triangle ABC is produced to a point D as shown in figure. The bisector of $\angle A$ meets BC at L. Prove that $\angle ABC + \angle ACD = 2\angle ALC$.

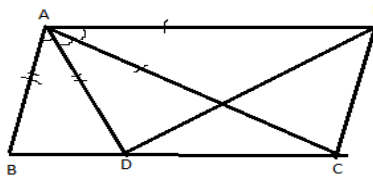


31. Prove that side opposite to greater angle is the longer.

32. If O is any point in the interior of ΔABC . Prove that $OA + OB + OC > \frac{1}{2}(AB + BC + CA)$.

33. ABC is a triangle, in which altitudes BE and CF to sides AC and AB are equal. Show that $\Delta ABE \cong \Delta ACF$. Also show that ΔABC is an isosceles triangle.

OR .



In the given figure $AB = AD$, $AC = AE$ and $\angle BAD = \angle CAE$. Prove that $BC = DE$.

34. Plot the following $(-1,0)$ $(1,0)$ $(1,2)$ $(-1,2)$. Find the perimeter of the figure so formed.

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