

Section A

(Questions 1 to 12 carry 1 mark each)

1. If Ramesh buys five apples at a cost of Rs.10 each and he sells all apples to Ganesh at a profit of 10%. Find the selling price of each apple.
A. 15
B. 11
C. 12
D. 13

2. Find the volume of the rectangular box whose length (l) = mn , breadth (b) = m^2p , depth (d) = pmn^2 .
A. m^4n^2p
B. $m^4n^3p^2$
C. m^3n^2p
D. $m^3n^2p^2$

3. What is the Euler's formula for a Polyhedron?
A. $F - V - E = 0$
B. $F + V - E = 2$
C. $F + V + E = 1$
D. $F + V + E = 3$

4. In a 5-match test series, Indian team won 60 percentage of matches. Find how many matches lost by Indian team?
A. 3
B. 2
C. 1

- A. 0
- B. 1
- C. 2
- D. 3

6. Solve $-\frac{22}{7} + \left(\frac{-3}{12}\right) =$

- A. $\frac{95}{28}$
- B. $-\frac{95}{28}$
- C. $\frac{285}{84}$
- D. $-\frac{285}{84}$

7. $\frac{1}{8} - \frac{2}{4}x + 1 = 0$, Find the value of 'x'.

- A. $\frac{9}{4}$
- B. $-\frac{9}{4}$
- C. 4
- D. 5

8. What values of (x, y) satisfy the given equation $x^3 - 2x^2y + 2xy^2 - y^2 = 0$

- A. (1, 1)
- B. (1, 2)
- C. (2, 1)
- D. (3, 1)

9. Express 81^{-2} in the powers of 3

- A. 3^8
- B. $\left(\frac{1}{3}\right)^8$
- C. 3^{-6}
- D. $\left(\frac{1}{3}\right)^6$

10. When a dice is thrown once what is the probability of the dice to show 6?

- A. $\frac{1}{3}$
- B. $\frac{1}{2}$
- C. 1
- D. $\frac{1}{6}$

11. Simplify the expression, $(a^{22} \times a^{-12}) \times (b^{-10} \times b^{20})$

- A. $(ab)^{10}$
- B. $a^{22} \times b^{20}$
- C. $(ab)^{12}(ab)^{12}$

12. If square root of $25x$ is 16 what is the value of x ?
- A. 4
B. 2
C. 5
D. 6

Section B

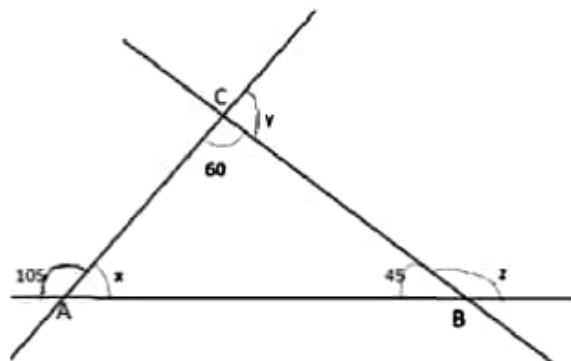
(Questions 13 to 24 carry 2 marks each)

13. Solve the expression

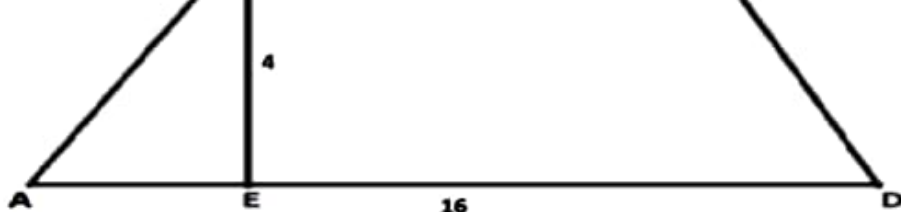
(a) $\frac{5}{6} + \left(\frac{-2}{3}\right) + \frac{1}{3} - \left(\frac{-2}{3} \div \frac{3}{2}\right) =$

(b) $\frac{1}{2} \times \left(\frac{-5}{6}\right) - \left(\frac{-10}{6}\right) + \left(\frac{1}{2} \div \frac{15}{6}\right) =$

14. If 'x' is subtracted from thrice the rational number $\frac{3}{6}$ to obtain the value of $\frac{2}{5}$, then find the value of x.
15. Check whether 18252 is a perfect cube or not? If not, find the number which is to be multiplied to 18252 become a perfect cube.
16. The difference between two natural numbers is 196 and the ratio of the two numbers is 9:5. Find the two natural numbers.
17. Find the angles of x, y and z in the figure given below.

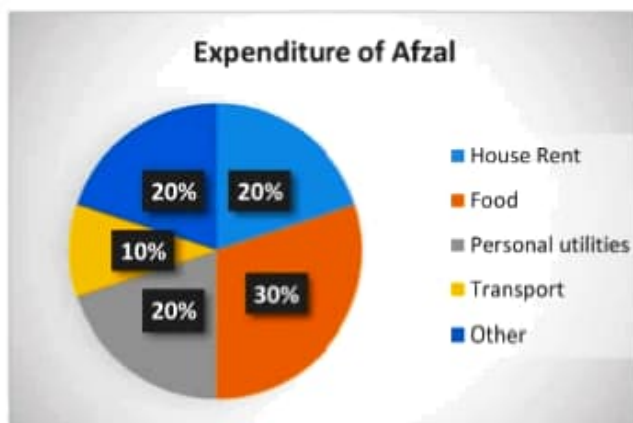


18. Ramu invested an amount of Rs.8000 at an interest rate 10% per annum compounded for 3 years. Find the compound interest.
19. Find the perimeter of the Trapezium?



20. The following Pie chart shows the expenditure of Afzal in a year. His annual income of Afzal is 5 lakhs.

- Find the amount he spent on food.
- What is the amount he spent for House rent and Food?



21. Solve $\frac{3x-5}{2} + x + \frac{2x-3}{3} = \frac{5}{6} - \frac{3x}{2}$

22.

- If $231325x$ is divisible by 9, then find the least value of x .
- If $1051x85$ is divisible by 11, then find the least value of x .

23. A toy is bought at Rs.4000 and marked to a price of Rs.5000. If the toy is sold for Rs.2250, then find the discount and discount percentage.

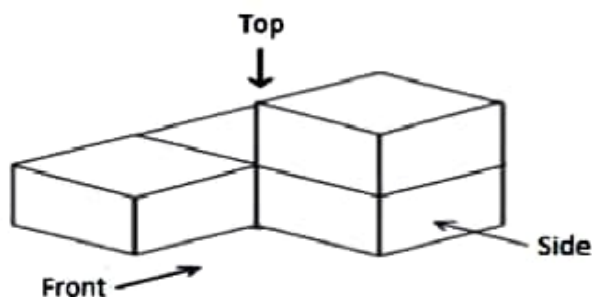
24. Sum of the ages of Ganesh and Ramesh is 35. Ganesh is 5 years elder than Ramesh. Then find the ages of Ramesh and Ganesh?

Section C

(Questions 25 to 32 carry 3 marks each)

25. Plot the points on the graph and also draw the line joining by using these points

26. If a box contains 4 Red balls, 5 Green balls, 6 Blue balls. Find the probability of
- Getting a green ball
 - Getting a blue ball
 - Non-red ball
27. Swapna bought two books for Rs.800 each. She sold one book at a loss of 10% and other at a profit of 15%. Find the selling price of each and also find the total profit or loss.
28. Draw the front view, side view, top view for the below 3-D figure



29. If the smallest side of a trapezium is 10 m and distance between the two parallel sides of the trapezium is 20 m and also its area is 480 m^2 , then find the other side of the trapezium.
30. Draw a Pie diagram by using the following data:
Monthly inventory goods of a manufacturing company is 5000 units. Out of the 5000 units, inventory of different goods is listed below:

Item	Nuts	Bolts	Washers	Keys	Cottor joints
Inventory level	1500	500	1750	850	400

31. If Pawan borrowed an amount of Rs.14,000 from Rahul with simple interest rate of 8% per annum for 2 years. What extra money should he pay if this sum is compounded with same interest rate and time period?
32. Simplify $(x^2 + 2x + 3)(x^2 - 3)(x - 1)$

33. Solve the below expressions:

(a) $\frac{36x^2y(x-y)^2}{(x^2-xy)}$

(b) $\frac{x^3-y^3}{(x-y)^6}$

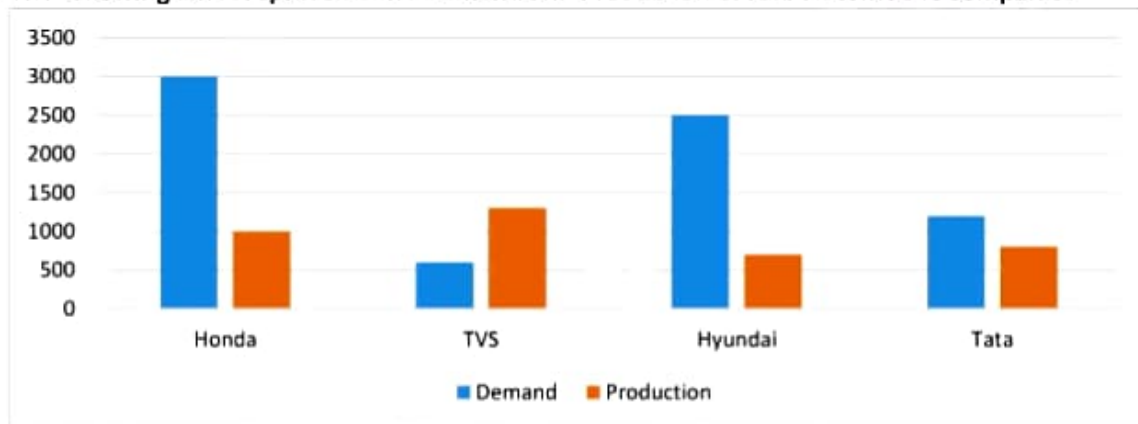
34. Find the values of the following

(a) $91^2 - 23^2$

(b) 101×99

(c) 999^2

35. The following chart represents the Demand and Production of four Automobile companies



(a) Which company meets high demand over the rate of production?

(b) Find the average production rate of all the companies.

(c) The difference between Demand and Production of Honda is x times of Tata. Find the value of x.

36. In an ATM if the currency notes of denominations of Rs.500/-, Rs.100/- and Rs.50/- respectively, the notes are in the ratio of 3:3:4. The total cash in the ATM is Rs.400,000/- How many notes of each denominations that ATM contains?

37. Find area of the below figure:

