

SECTION - A

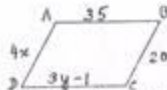
Question numbers 1 to 7 carry 1 mark each.

1. Multiply : $4abc \times 5abc$ (1)
2. Find the total surface area of a cube of side 5 cm. (1)
3. Express 0.000000865 in standard form. (1)
4. State whether the number of articles (x) and their price (y) are in direct or inverse variation. (1)
5. Factorise : $y(y-3) + 7(y-3)$ (1)
6. Solve the equation : $3x - 12 = 0$ (1)
7. Is it possible to have a quadrilateral whose angles are of measures $115^\circ, 155^\circ, 60^\circ$ and 50° ? (1)

SECTION - B

Question numbers 8 to 14 carry 2 marks each.

8. If $(x + \frac{1}{x}) = 12$, find the value of $(x^2 + \frac{1}{x^2})$. (2)
9. A rectangular tin of oil is 20 cm long and 12 cm wide. It contains 1680 cm^3 of oil. What is the depth of the oil in the tin? (2)
10. Find x so that $(\frac{1}{3})^{-2} \times (\frac{1}{3})^{-5} = (\frac{1}{3})^{3x-1}$ (2)
11. Factorise : $m^2 + 11mn + 18n^2$ (2)
12. Solve : $\frac{2x}{3} - \frac{x}{5} = \frac{3x-11}{5}$ (2)
13. Find x and y : (2)



14. In an army camp, there are 320 soldiers. There is enough food stock for 90 days. If 20 soldiers move to another camp, for how long will the food last? (2)

SECTION - C

Question numbers 15 to 23 carry 3 marks each.

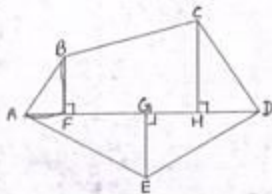
15. Evaluate using suitable identity : $\frac{(298 \times 298) - (202 \times 202)}{96}$ (3)
16. Construct a quadrilateral GIFT, given $GI = 4.2 \text{ cm}$, $FT = 4.5 \text{ cm}$, $IF = 5 \text{ cm}$, $\angle I = 75^\circ$, $\angle F = 100^\circ$. (3)
17. Isha bought a wrapping paper that is 12 cm wide and 24 cm long, to wrap a cuboidal package 8 cm high, 2 cm wide and 24 cm long. Did she buy enough paper to wrap the package? (3)

18. Simplify : $[(\frac{8}{16})^{-1} \times (\frac{16}{5})^{-1}] \div [(\frac{-1}{4})^{-3} \div (\frac{-1}{4})^{-4}]$ (3)
19. The speed of a train 150 m long is 45 km/hr. How many seconds will it take to pass a platform 500 m long ? (3)
20. Factorise : $x^2 + 4y^2 - z^2 - 4xy$ (3)
21. Simplify : $5(3p^2 - 15p + 12) + (p - 1)$ (3)
22. Sarita's mother is four times as old as Sarita. Twenty years later, her mother will be twice as old as Sarita will be then. Find the present age of Sarita. (3)
23. Two opposite angles of a parallelogram are $(4x - 5)^\circ$ and $(60 - x)^\circ$. Find the measure of each angle of the parallelogram. (3)

SECTION - D

Question numbers 24 to 31 carry 4 marks each.

24. Construct a parallelogram with sides $AB = 5.5$ cm, $BC = 4$ cm and diagonal $AC = 6$ cm. Write the steps of construction. (4)
25. A soft drink is available in two types of tin cylindrical cans, can 'A' of diameter 7 cm and height 14 cm and can 'B' of diameter 12 cm and height 7 cm. Which can out of the two should be bought if both are available for the same price ? (4)
26. Find the area of the polygon ABCDE which is divided into parts as shown in the figure: given $AD = 8$ cm, $AH = 6$ cm, $AG = 4$ cm, $AF = 3$ cm, and perpendiculars $BF = 2$ cm, $CH = 3$ cm, $EG = 2.5$ cm. (4)



27. Diagonals of a quadrilateral are of lengths 10 cm and 24 cm. If the diagonals bisect each other at right angles, find the length of each side of the quadrilateral. What special name is given to this type of quadrilateral? If one angle of this quadrilateral is 80° , find the other three angles. (4)
28. Simplify : $\frac{(x^2 + 10x + 25)(x^2 - 4)}{(x^2 + 4x + 4)(x^2 - 25)}$ (4)
29. Pranav receives a certain amount of money on his retirement from his employer. He gives half of this money and an additional sum of Rs 10,000 to his daughter. He also gives one-third of the money received and an additional sum of Rs 3000 to his son. If the daughter gets twice as much as the son, find the amount of money received on his retirement and the share of each child. (4)

30. A metal ball is heated and its temperature is noted at different intervals as shown in the table :

Time (seconds)	0	2	4	6	10	14
Temperature ($^{\circ}\text{C}$)	10	15	20	25	35	45

Draw a line graph to represent the above data and answer the following questions :

- (i) What is the temperature of the ball when the time is 8 seconds ? (4)
 (ii) After how many seconds the temperature of the ball is 40°C ? (4)
31. Write the coordinates of the points A, B, C, D, E, F, G and H from the following graph. (4)

