



BK BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL

ANNUAL EXAMINATION , 2026

MATHEMATICS (041)



Class : VIII

Date : 10-03-2025

MARKING SCHEME- Set-2

Duration : 3 Hrs

Max. Marks : 80

SECTION A

Each question carries 1 mark. (mcq)

1. 0 [C]
2. Semi-circular sector [C]
3. Rs 9 [B]
4. 5 [A]
5. None of these [D]
6. -4 [C]
7. 20 cm [B]
8. 486 cm^2 [A]
9. $7xy$ [C]
10. $(y + 7)(y - 7)$ [C]
11. Double Bar Graph [C]
12. Origin [C]
13. 48 [C]
14. 5 [C]
15. 16 [B]
16. 70^0 [B]
17. 9^{20} [C]
18. 1 [C]
19. [A]
20. [A]

SECTION B

21. Total number of balls in the bag: 9 black + 12 white = 21 balls 1/2
 Number of black balls = 9 1/2
 Probability (white) = $\frac{9}{21} = \frac{3}{7}$ 1
22. Ratio 2 : 5 = $\frac{2}{5} \times 100\% = 50\%$ 1/2 + 1/2
 Ratio 5 : 4 = $\frac{5}{4} \times 100\% = 125\%$ 1/2 + 1/2
- OR
- Simple interest = $\frac{P \times R \times T}{100}$ 1/2
 $= \frac{1200 \times 10 \times 3}{100}$ 1
 S.I. = Rs 3600 1/2
23. i) $(2p^2q^2 - 3pq + 4) + (5 + 7pq - 3p^2q^2) = -p^2q^2 + 4pq + 9$ 1

$$\begin{aligned} \text{ii) } a-b + ab + b-c + bc + c - a + ac &= a-b + b - c + c - a + ab + bc + ca && \frac{1}{2} \\ &= ab + bc + ca && \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \text{24. i) } (3 - 5y)(3 + y) &= 3(3 + y) - 5y(3 + y) && \frac{1}{2} \\ &= 9 - 12y - 15y^2 && \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \text{ii) } (4 + 7y)(7y - 1) &= 4(7y - 1) + 7y(7y - 1) && \frac{1}{2} \\ &= 7y^2 + 28y - 11 && \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \text{25. Find the value of: i) } (3^0 + 4^{-1}) \times 2^2 &= (1 + \frac{1}{4}) \times 4 && \frac{1}{2} \\ &= \frac{5}{4} \times 4 && \frac{1}{2} \\ &= 5 && \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \text{ii) } (\frac{1}{2})^{-2} + (\frac{1}{3})^{-2} + (\frac{1}{4})^{-2} &= 2 + 3 + 4 && \frac{1}{2} \\ &= 9 && \frac{1}{2} \end{aligned}$$

OR

$$\begin{aligned} \text{Evaluate: } [(\frac{1}{3})^{-1} - (\frac{1}{4})^{-1}]^{-1} &= [\frac{3}{1} - \frac{4}{1}]^{-1} && 1 \\ &= [3 - 4]^{-1} && \frac{1}{2} \\ &= [-1]^{-1} && \frac{1}{2} \\ &= -1 && \frac{1}{2} \end{aligned}$$

SECTION C

26. Central angle 1

Total hours = 24 hours

School : 120° , Home Assignment : 45° , Play = 30° , Sleep = 120° , other = 45°

For correct figure: 2

27. Simplify. i) $3(x^2 + x + 2) + 7$ and find its value at $x = 2$

$$\begin{aligned} 3x^2 + 3x + 6 + 7 &= 3(2)^2 + 3(2) + 13 && \frac{1}{2} \\ &= 12 + 6 + 13 && \frac{1}{2} \\ &= 31 && \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \text{28. Factorise using the identity: a) } 25x^2 + 30x + 9 &&& \frac{1}{2} \\ &= (5x)^2 + 30x + (3)^2 && \frac{1}{2} \\ &= (5x)^2 + 2 \times 5x \times 3 + (3)^2 && \frac{1}{2} \\ &= (5x + 3)^2 && \frac{1}{2} \end{aligned}$$

$$\text{b) } 49p^2 - 36 = (7p)^2 - (6)^2 = (7p + 3)(7p - 3) \quad 1$$

$$\begin{aligned} \text{29. } 15(y - 4) - 2(y - 9) + 5(y + 6) &= 0 && \\ 15y - 60 - 2y + 18 + 5y + 30 &= 0 && 1 \\ 15y + 5y - 2y - 60 + 18 + 30 &= 0 && 1 \\ 18y - 12 &= 0 && \frac{1}{2} \\ y &= \frac{2}{3} && \frac{1}{2} \end{aligned}$$

OR

$$\begin{aligned} \frac{x}{2} - \frac{3x}{4} + \frac{5x}{6} &= 21 && \\ \frac{6x}{12} - \frac{9x}{12} + \frac{10x}{12} &= 21 && 1 \\ -3x + 10x &= 21 \times 12 && 1 \\ x &= 36 && 1 \end{aligned}$$

30. $(3x + 5)^\circ$ and $(61 - x)^\circ$
 $3x + x = 61 - 5$ $\frac{1}{2}$
 $x = 14$ $\frac{1}{2}$
One angle = $3 \times 14 + 5$ $\frac{1}{2}$
= 47° and 47° $\frac{1}{2}$
Other angles are = $133^\circ, 133^\circ$ $\frac{1}{2}$
OR
Since opposite angles of parallelogram are equal
 $3x = 18$ $\frac{1}{2}$
 $x = 6$ and $\frac{1}{2}$
 $3y - 1 = 26$ $\frac{1}{2}$
 $3y = 27$ $\frac{1}{2}$
 $y = 9$ $\frac{1}{2}$
31. Find the value of x so that $7^{3x+2} \div 7^1 = 7^4$
 $7^{3x+2-1} = 7^4$ 1
 $7^{3x+1} = 7^4$ $\frac{1}{2}$
 $3x + 1 = 4$ $\frac{1}{2}$
 $x = 1$ 1
OR
i) 93800 ii) 0.00321 iii) 0.000 000 00 713 1+ 1 + 1
32. Money left with him = $(100 - 75)\%$
= 25% 1
Let the money at the beginning be Rs x $\frac{1}{2}$
 25% of x = 600 1
 $\frac{25}{100} \times x = 600$ 1
 $x = 600 \times 4$
= Rs 2400 1
OR
Amount = $p \left(1 + \frac{R}{100}\right)^n$ $\frac{1}{2}$
= $5000 \left(1 + \frac{10}{100}\right)^2$
= $5000 \times 11 \times 11 \div 10 \times 10$ 1
= 50 121 1
= Rs 6050 $\frac{1}{2}$
C. I. = A - P $\frac{1}{2}$
= $6050 - 5000$ $\frac{1}{2}$
= Rs 1050 $\frac{1}{2}$
33. $5p^2 - 25p + 20 = 5(p^2 - 5p + 4)$ $\frac{1}{2}$
Factorise $p^2 - 5p + 4$
 $p^2 - 5p + 4 = p^2 - p - 4p + 4 = (p-1)(p-4)$ 1 $\frac{1}{2}$
Solve original equation
 $(5p^2 - 25p + 20) \div (p-1) = 5(p-1)(p-4) \div (p-1)$ 1 $\frac{1}{2}$
= $5(p-4)$ $\frac{1}{2}$
34. Let the length of the other parallel side be b. $\frac{1}{2}$
Length of one parallel side, a = 10 cm $\frac{1}{2}$
height, (h) = 4 cm and $\frac{1}{2}$
Area of a trapezium is 34 cm^2 $\frac{1}{2}$
Formula for, Area of trapezium = $(1/2) \times (a + b) \times h$ $\frac{1}{2}$
 $34 = \frac{1}{2}(10+b) \times 4$ $\frac{1}{2}$
 $34 = 2 \times (10+b)$ 1
Length of other parallel side is b = 7 cm $\frac{1}{2}$

Hence another required parallel side is 7 cm.

OR

Length of one diagonal, $d_1 = 45$ cm and $d_2 = 30$ cm

$$\begin{aligned} \therefore \text{Area of one tile} &= \left(\frac{1}{2}\right)d_1d_2 && \frac{1}{2} \\ &= \left(\frac{1}{2}\right) \times 45 \times 30 = 675 && 1 \end{aligned}$$

$$\text{Area of one tile} = 675 \text{ cm}^2 \quad \frac{1}{2}$$

$$\begin{aligned} \text{Area of 3000} &= 675 \times 3000 && \frac{1}{2} \\ &= 2025000 \text{ cm}^2 && \frac{1}{2} \end{aligned}$$

$$= 2025000/10000 \quad \frac{1}{2}$$

$$= 202.50 \text{ m}^2 [\because 1\text{m}^2 = 10000 \text{ cm}^2]$$

$$\therefore \text{Cost of polishing the floor per sq. meter} = 4 \quad \frac{1}{2}$$

$$\begin{aligned} \text{Cost of polishing the floor per } 202.50 \text{ sq. meter} \\ &= 4 \times 202.50 = 810 && \frac{1}{2} \end{aligned}$$

Hence the total cost of polishing the floor is Rs. 810. 1/2

35. a) Let the interior angles be m and n

$$125^\circ + m = 180^\circ \Rightarrow m = 180^\circ - 125^\circ = 55^\circ \quad (\text{Linear pair}) \quad 1$$

$$125^\circ + n = 180^\circ \quad \frac{1}{2}$$

$$\begin{aligned} \Rightarrow n &= 180^\circ - 125^\circ \quad (\text{Linear pair}) \\ &= 55 && \frac{1}{2} \end{aligned}$$

$x = m + n$ (The exterior angle of a triangle is equal to the sum of the two opposite interior angles)

$$\begin{aligned} \Rightarrow x &= 55^\circ + 55^\circ \\ &= 110^\circ && \frac{1}{2} \end{aligned}$$

b)

$$y = 110^\circ \text{ -- Opposite angles} \quad \frac{1}{2}$$

$$y + 40 + z = 180 \quad \text{Adjacent angles} \quad \frac{1}{2}$$

$$110 + 40 + z = 180^\circ \quad \frac{1}{2}$$

$$z = 30^\circ \quad \frac{1}{2}$$

$$x = z \quad \text{alternate angles} \quad \frac{1}{2}$$

$$x = 30^\circ$$

$$36. \text{ i) Probability that point at } 2 = \frac{1}{8} \quad 1$$

$$\text{ii) Probability that point at even number} = \frac{4}{8} = \frac{1}{2} \quad 2$$

OR

$$\text{Probability that point at PRIME number} = \frac{4}{8} = \frac{1}{2}$$

$$\text{iii) i) Probability that point at } 5 = \frac{1}{8} \quad 1$$

$$37. \text{ i) Sale of Car in 2015} = 19000 \quad 1$$

$$\text{ii) In 2017 sale was maximum.} \quad 1$$

$$\begin{aligned} \text{iii) Sale in in 2013 and 2012} &= 18000 - 15000 \\ &= 3000 && 2 \end{aligned}$$

OR

In 2013, by 2000

$$38. \text{ i) Radius of the roller} = 1 \text{ m} \quad 1$$

$$\begin{aligned} \text{ii) CSA} &= 2 \times \frac{22}{7} \times 1 \times 7 \\ &= 44 \text{ m}^2 && 2 \end{aligned}$$

OR

$$\begin{aligned} \text{Area levelled in 5 revolution} &= 44 \times 5 \\ &= 220 \text{ m}^2 \end{aligned}$$
