



10 7 5

Question 3:

In a "magic square", the sum of the numbers in each row, in each column and along the diagonals is the same. Is this a magic square?

$\frac{4}{11}$	$\frac{9}{11}$	$\frac{2}{11}$
$\frac{3}{11}$	$\frac{5}{11}$	$\frac{7}{11}$
$\frac{8}{11}$	$\frac{1}{11}$	$\frac{6}{11}$

(Along the first row $\frac{4}{11} + \frac{9}{11} + \frac{2}{11} = \frac{15}{11}$)

Answer 3:

$$\text{Sum of first row} = \frac{4}{11} + \frac{9}{11} + \frac{2}{11} = \frac{15}{11} \quad [\text{Given}]$$



$$\text{Sum of second row} = \frac{3}{11} + \frac{5}{11} + \frac{7}{11} = \frac{3+5+7}{11} = \frac{15}{11}$$

$$\text{Sum of third row} = \frac{8}{11} + \frac{1}{11} + \frac{6}{11} = \frac{8+1+6}{11} = \frac{15}{11}$$

$$\text{Sum of first column} = \frac{4}{11} + \frac{3}{11} + \frac{8}{11} = \frac{4+3+8}{11} = \frac{15}{11}$$

$$\text{Sum of second column} = \frac{9}{11} + \frac{5}{11} + \frac{1}{11} = \frac{9+5+1}{11} = \frac{15}{11}$$

$$\text{Sum of third column} = \frac{2}{11} + \frac{7}{11} + \frac{6}{11} = \frac{2+7+6}{11} = \frac{15}{11}$$

$$\text{Sum of first diagonal (left to right)} = \frac{4}{11} + \frac{5}{11} + \frac{6}{11} = \frac{4+5+6}{11} = \frac{15}{11}$$

$$\text{Sum of second diagonal (left to right)} = \frac{2}{11} + \frac{5}{11} + \frac{8}{11} = \frac{2+5+8}{11} = \frac{15}{11}$$

Since the sum of fractions in each row, in each column and along the diagonals are same, therefore it is a magic square.

Question 4:

A rectangular sheet of paper is $12\frac{1}{2}$ cm long and $10\frac{2}{3}$ cm wide. Find its perimeter.

Answer 4:

Given: The sheet of paper is in rectangular form.

Length of sheet = $12\frac{1}{2}$ cm and Breadth of sheet = $10\frac{2}{3}$ cm

Perimeter of rectangle = 2 (length + breadth)

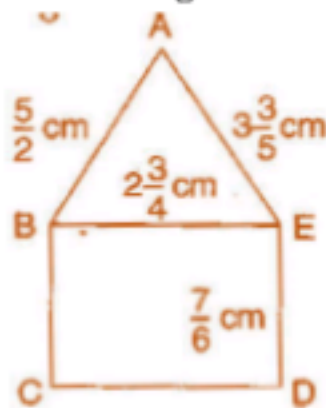
$$\begin{aligned} &= 2\left(12\frac{1}{2} + 10\frac{2}{3}\right) = 2\left(\frac{25}{2} + \frac{32}{3}\right) \\ &= 2\left(\frac{25 \times 3 + 32 \times 2}{6}\right) = 2\left(\frac{75 + 64}{6}\right) \\ &= 2 \times \frac{139}{6} = \frac{139}{3} = 46\frac{1}{3} \text{ cm.} \end{aligned}$$

Thus, the perimeter of the rectangular sheet is $46\frac{1}{3}$ cm.



Question 5:

Find the perimeter of (i) $\triangle ABE$, (ii) the rectangle BCDE in this figure. Whose perimeter is greater?

**Answer 5:**

(i) In $\triangle ABE$, $AB = \frac{5}{2}$ cm, $BE = 2\frac{3}{4}$ cm, $AE = 3\frac{3}{5}$ cm

$$\begin{aligned} \text{The perimeter of } \triangle ABE &= AB + BE + AE \\ &= \frac{5}{2} + 2\frac{3}{4} + 3\frac{3}{5} = \frac{5}{2} + \frac{11}{4} + \frac{18}{5} \\ &= \frac{50 + 55 + 72}{20} = \frac{177}{20} = 8\frac{17}{20} \text{ cm} \end{aligned}$$

Thus, the perimeter of $\triangle ABE$ is $8\frac{17}{20}$ cm.

(ii) In rectangle BCDE, $BE = 2\frac{3}{4}$ cm, $ED = \frac{7}{6}$ cm

$$\begin{aligned} \text{Perimeter of rectangle} &= 2(\text{length} + \text{breadth}) \\ &= 2\left(2\frac{3}{4} + \frac{7}{6}\right) = 2\left(\frac{11}{4} + \frac{7}{6}\right) \\ &= 2\left(\frac{33 + 14}{12}\right) = \frac{47}{6} = 7\frac{5}{6} \text{ cm} \end{aligned}$$

Thus, the perimeter of rectangle BCDE is $7\frac{5}{6}$ cm.

Comparing the perimeter of triangle and that of rectangle,

$$8\frac{17}{20} \text{ cm} > 7\frac{5}{6} \text{ cm}$$

Therefore, the perimeter of triangle ABE is greater than that of rectangle BCDE.