PVG's

Muktangan English School & Jr. College, Pune - 9

Formative Written Test - II (2024-25)

STD VIII

Subject : Mathematics | Marks - 20

Date : 28.01.2025 | Time : 8.15 am to 9.30 am

Q1. A) Fill in the blanks and rewrite the statements. (2)

1. The greatest index of the variable in the given polynomial is called _____ of the polynomial.

2. $20b^2 \div 4b =$ _____

B) State whether the following statements are true or false and rewrite the statements. (2)

1. In a percentage bar graph, all the bars are of height 50 units.

2. If x = 6, then x + 9 = 15.

Q2. Attempt any three of the following . (6)

1. Divide $6x^2 + 4x + 4$ by 2x by filling the boxes given below and hence write the quotient and the remainder.

$$
\begin{array}{r|l}
 & \square + 2 \\
\hline
2x & 6x^2 + 4x + 4 \\
 & \underline{(-)\ 6x^2} \\
 & 0 + \square + 4 \\
 & \underline{\quad (-)\ 4x} \\
 & 0 + \square
\end{array}
$$

∴ Quotient = $\square$

Remainder = 4

2. Solve : 2m + 7 = 9

3. Find the mean of : 15, 20, 8, 10, 2.

4. Solve : 3x + 12 = 2x - 4.

Q3. Attempt any two of the following **(6)**

1. Divide $(y^2 + 10y + 24)$ by $(y + 4)$ and write the quotient and the remainder.

2. The difference between two natural number is 72. If we get 4 on dividing the greater number by the smaller number, find the smaller number by filling in the boxes given below.

→ **Solution :**

Let the smaller number be 'x'.

∴ the greater number is ☐

From the given condition, $\frac{x + 72}{\square} = 4$

∴ $x + 72 = 4 \times \square$

∴ $4 \times \square - x = 72$

∴ $\square = 72$

∴ $x = \square$ (on solving)

∴ The smaller number is ☐

3. The following table shows the number of saplings planted by 30 students. Find the mean of the saplings planted by each student by filling the boxes given in the table.

Number of saplings (scores) x_i	Number of students (frequency) f_i	$x_i \times f_i$
1	4	☐
2	☐	12
3	12	36
4	☐	32
	N = ☐	$\sum x_i \times f_i = 84$

Mean = $\bar{x} = \frac{\square}{N} = \frac{84}{\square}$

∴ The mean of the saplings planted is ☐

Q4. Attempt any one of the following. **(4)**

1. Divide the polynomial $x^2 + x + 2x^3 + 9$ by $2x - 1$ and hence write the quotient and the remainder.

2. The denominator of a fraction is greater than its numerator by 12. If the numerator is decreased by 2 and the denominator is increased by 7, the new fraction is equivalent to $\frac{1}{2}$. Find the fraction by filling the boxes given below.

→ **Solution :**

Let the numerator of the fraction be x.

The denominator of the fraction is greater than its numerator by 12.

∴ the denominator is $\square$

∴ the fraction is $\frac{x}{x + 12}$

The numerator is decreased by 2.

∴ the new numerator is $\square$

The denominator is increased by 7.

∴ the new denominator is (x + 19)

From the given condition,

$$\frac{\square}{x + 19} = \frac{1}{2}$$

$2(\square) = x + 19$

$2x - \square = x + 19$

$2x - \square = 19 + 4$

$x = 23$

∴ the numerator is 23

and denominator is $\square$

∴ the fraction is $\frac{\square}{\square}$

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