STD - VI

Assignment – 6

Algebraic Expression

1. **Write the following statement using numbers, literals and signs of basic operations:**

   5 times a number x is less than 7 times a number y by 14.

   Solution:

   $7y - 5x = 14.$

2. **If $a = 2,\ b = -1$ find the value of $3a^2 - b$.**

   Solution:

   $3a^2 - b$

   $\Rightarrow \quad a = 2, \quad b = -1$

   $= \quad 3(2)^2 - (-1)$

   $= \quad 3(4) \ + \ 1$

   $= \quad 12 + 1$

   $= \quad 13$

3. **Add:**

$$\begin{array}{r} \boldsymbol{x - 2y + 4z} \\ \boldsymbol{-x + \ y \ + \ z} \\ \boldsymbol{2x + \ y \ + \ z} \\ \hline \\ \hline \end{array}$$

Solution:

$$\begin{array}{r} x - 2y + 4z \\ -x + y + z \\ 2x + y + z \\ \hline 2x \quad + 6z \\ \hline \end{array}$$

4. Subtract:

$2a - b + 5c$ from $4a + b - 5c$

Solution:

$$\begin{array}{r} 4a \quad + \ b \quad - \ 5c \\ (-)2a \ (+) \ b \ (-) \ 5c \\ \hline 2a \quad + 2b \quad - 10c \\ \hline \end{array}$$

Assignment - 7

1. **Solve by trial and error method.**

   $\boldsymbol{2x + 1 = 3x - 6}$

   Solution:

   $2x + 1 = 3x - 6$

	L.H.S	**R.H.S**
$x = 1$	$2(1) + 1 = \ \ 3$	$3(1) - 6 = -3$
$x = 2$	$2(2) + 1 = \ \ 5$	$3(2) - 6 = \ \ 0$
$x = 7$	$2(7) + 1 = 15$	$3(7) - 6 = \ 15$

   $\because$ LHS = RHS

   $\therefore\ x = 7$

2. **Solve the equation and check the results.**

   $\boldsymbol{\frac{2}{3}\, x\ = 60}$

   Solution:

   $\frac{2}{3}\, x\ = 60$,

   $x\ = 60\ \times \frac{3}{2}$

   $x = 90$

   Verification

L.H.S	R.H.S
$\frac{2}{3}\ (90) = 60,$	60

   $\therefore$ L.H.S = R.H.S verified.

3. **Solve and verify the answer.**

a) $\frac{7}{6} - \frac{x}{3} = x + \frac{11}{6}$

b) $x - 2 = 5 + \frac{x}{2}$

a) $\frac{7}{6} - \frac{x}{3} = x + \frac{11}{6}$

Solution:

$$\frac{7}{6} - \frac{11}{6} = \frac{x}{3} + \frac{x}{1} = \frac{x + 3x}{3}$$

$$\frac{-4}{6} = \frac{4x}{3}$$

$$\frac{-2}{3} = \frac{4x}{3}$$

$$-6 = 12x$$

$$\frac{-6}{12} = x$$

$$\therefore \quad x = \frac{-1}{2}$$

b) $x - 2 = 5 + \frac{x}{2}$

Solution:

$$\frac{x}{1} - \frac{x}{2} = 5 + 2 = 7$$

$$\frac{2x - x}{2} = 7$$

$$\therefore \quad x = 14$$

Assignment – 8

Ratio and Proportion

1. **Find the ratio of**

   a) **60 minutes to an hour**

   b) **30 cm to 1.5 m.**

   Solution:

   60 min : 1 hour

   = 60 min : 60 min

   = 1 : 1

   b) 30 cm to 1.5 m

   30 cm : 1.05 m

   30 cm : 105 cm

   $$\frac{30}{105} = \frac{2}{7}$$

   $\therefore$ 2 : 7

2. **Two numbers are in the ratio 5 : 6 and their sum is 33. Find the larger number.**

   Solution:

   Let the numbers be $5x$ and $6x$.

   $$5x + 6x = 33$$

   $$11x = 33$$

   $\therefore$ $x = 3$

$\therefore$ Larger number $= 18$

3. If $5 : x = 45 : 27$. Find x.

Solution:

$$5 : x = 45 : 27$$

$$5 \times 27 = 45 \times x$$

$$\Rightarrow \quad x = \frac{\cancel{5} \times \overset{3}{\cancel{27}}}{\underset{\cancel{9}}{\cancel{45}}}$$

$\therefore \quad x = 3$

Assignment – 9

1. What is the angle 210° called?

Solution:

210° → Reflex angle.

2. What is $\frac{3}{2}$ of a right angle?

Solution:

$\frac{3}{2}$ of 90°

$$\Rightarrow \quad \frac{3}{\cancel{2}} \times \overset{45^\circ}{\cancel{90^\circ}}$$

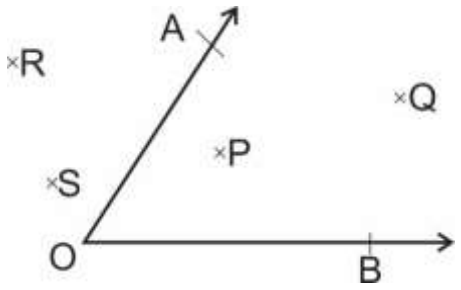
$= 135^\circ$

3. What is the measure of a straight angle?

Solution:

Straight angle = 180°

4. Name the points in the



a) Interior of the ∠AOB

b) Exterior of the ∠AOB

Solution:

a) Points in the interior P, Q

b) Points in the exterior R, S

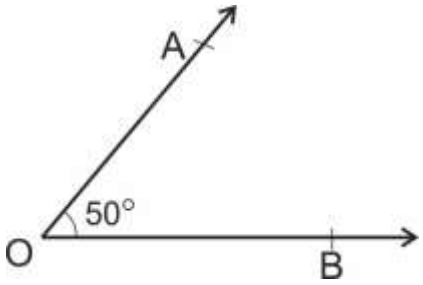
Assignment – 10

Construction using rules and a pair of compass.

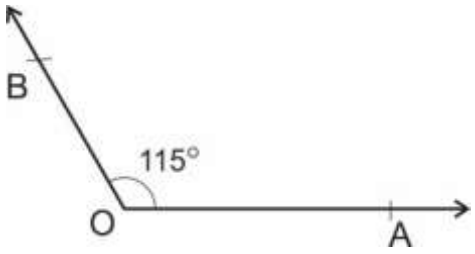
1. Construct angle of 50° , 115° using protractor.

Solution:

a) Construct of 50°

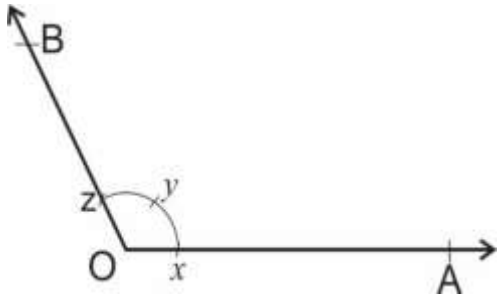


b) Construct of 115°



2. Construct 120° using and a pair of compasses.

Solution:



Construction:

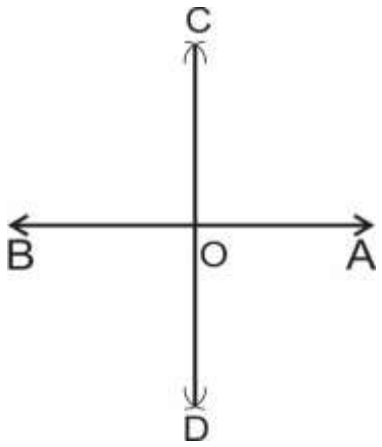
1) Draw a ray OA.

2) With O as centre suitable radius cut an arc cutting OA at x.

3) With x as centre same radius cut an arc to get y, with y as centre same radius cut an arc to get z join Oz extend it form $\angle$AOB.

3. Draw AB = 4.6 cm. Draw the perpendicular bisector of AB.

Solution:



Construction:

1) Draw AB = 4.6 cm.

2) With A centre cut arc on either sides of AB.

3) With O as centre cut arcs on either side of AB (with same radius) to get C & D.

4) Join CD the line CD bisects AB.