Linear equations in one variable Ex 8.1 Q1

Answer :

(i) $x = 4$ is the root of $3x - 5 = 7$.

Now, substituting x = 4 in place of 'x' in the given equation $3x - 5 = 7$,

$3(4) - 5 = 7$

$12 - 5 = 7$

$7 = 7$

LHS = RHS

Hence, $x = 4$ is the root of $3x - 5 = 7$.

(ii) $x = 3$ is the root of $5 + 3x = 14$.

Now, substituting x = 3 in place of 'x' in the given equation $5 + 3x = 14$,

$5 + 3(3) = 14$

$5 + 9 = 14$

$14 = 14$

LHS = RHS

Hence, $x = 3$ is the root of $5 + 3x = 14$.

(iii) $x = 2$ is the root of $3x - 2 = 8x - 12$.

Now, substituting x = 2 in place of 'x' in the given equation $3x - 2 = 8x - 12$,

$3(2) - 2 = 8(2) - 12$

$6 - 2 = 16 - 12$

$4 = 4$

LHS = RHS

Hence, $x = 2$ is the root of $3x - 2 = 8x - 12$.

(iv) x = 4 is the root of $\frac{3x}{2} = 6$.

Now, substituting x = 4 in place of 'x' in the given equation $\frac{3x}{2} = 6$,

$\frac{3 \times 4}{2} = 6$

$\frac{12}{2} = 6$

$6 = 6$

LHS = RHS

Hence, x = 4 is the root of $\frac{3x}{2} = 6$.

(v) $y = 2$ is the root of $y - 3 = 2y - 5$.

Now, substituting y = 2 in place of 'y' in the given equation $y - 3 = 2y - 5$,

$2 - 3 = 2(2) - 5$

$-1 = 4 - 5$

$-1 = -1$

LHS = RHS

Hence, $y = 2$ is the root of $y - 3 = 2y - 5$.

(vi) $x = 8$ is the root of $\frac{1}{2}x + 7 = 11$.

Now, substituting x = 8 in place of 'x' in the given equation $\frac{1}{2}x + 7 = 11$,

$\frac{1}{2} \times 8 + 7 = 11$

$4 + 7 = 11$

$11 = 11$

LHS = RHS

Hence, $x = 8$ is the root of $\frac{1}{2}x + 7 = 11$

********** END **********