Linear equations in one variable Ex 8.2 Q15

**Answer :**

$13 - 2x = 0$

Subtracting 13 from both sides, we get

$\Rightarrow 13 - 2x - 13 = 0 - 13$

$\Rightarrow -2x = -13$

Multiplying both sides by -1, we get

$\Rightarrow -2x \times (-1) = -13 \times (-1)$

$\Rightarrow 2x = 13$

Dividing both sides by 2, we get

$\Rightarrow 2x2 = 13 \times 2$

$\Rightarrow x = 16$

Verification:

Substituting $x = 16$ in LHS, we get

LHS $= 13 - 2 \times 16 = 13 - 13 = 0$, and RHS $= 0$

LHS = RHS

Hence, verified.

Linear equations in one variable Ex 8.2 Q16

**Answer :**

$3(x + 6) = 24$

Dividing both sides by 3, we get

$\Rightarrow \frac{3(x + 6)}{3} = \frac{24}{3}$

$\Rightarrow (x + 6) = 8$

Subtracting 6 from both sides, we get

$\Rightarrow x + 6 - 6 = 8 - 6$

$\Rightarrow x = 2$

Verification:

Substituting $x = 2$ in LHS, we get

LHS $= 3(x + 6) = 3(2 + 6) = 3 \times 8 = 24$, and RHS $= 24$

LHS = RHS

Hence, verified.

Linear equations in one variable Ex 8.2 Q17

**Answer :**

$3(x+2)-2(x-1)=7$

On expanding the brackets, we get

$\Rightarrow (3\times x)+(3\times 2)-(2\times x)+(2\times 1)=7$

$\Rightarrow 3x+6-2x+2=7$

$\Rightarrow 3x-2x+6+2=7$

$\Rightarrow x+8=7$

Subtracting 8 from both sides, we get

$\Rightarrow x+8-8=7-8$

$\Rightarrow x=-1$

Verification:

Substituting $x=-1$ in LHS, we get

LHS $= 3(x+2)-2(x-1)$, and RHS $= 7$

LHS $= 3(-1+2)-2(-1-1)=(3\times 1)-(2\times -2)=3+4=7$, and RHS $= 7$

LHS = RHS

Hence, verified.

Linear equations in one variable Ex 8.2 Q18

**Answer :**

$8(2x-5)-6(3x-7)=1$

On expanding the brackets, we get

$\Rightarrow (8\times 2x)-(8\times 5)-(6\times 3x)+(-6)\times(-7)=1$

$\Rightarrow 16x-40-18x+42=1$

$\Rightarrow 16x-18x+42-40=1$

$\Rightarrow -2x+2=1$

Subtracting 2 from both sides, we get

$\Rightarrow -2x+2-2=1-2$

$\Rightarrow -2x=-1$

Multiplying both sides by $-1$, we get

$\Rightarrow -2x\times(-1)=-1\times(-1)$

$\Rightarrow 2x=1$

Dividing both sides by 2, we get

$\Rightarrow \frac{2x}{2}=\frac{1}{2}$

$\Rightarrow x=\frac{1}{2}$

Verification:

Substituting $x=\frac{1}{2}$ in LHS, we get

$=8(2\times\frac{1}{2}-5)-6(3\times\frac{1}{2}-7)$

$=8(1-5)-6(\frac{3}{2}-7)$

Linear equations in one variable Ex 8.2 Q19

$= 8\times(-4) - (6 \times \frac{3}{2}) + (6 \times 7)$

$= -32 - 9 + 42 = -41 + 42 = 1 = \text{RHS}$

LHS = RHS

Hence, verified.

Linear equations in one variable Ex 8.2 Q20

**Answer :**

$6(1 - 4x) + 7(2 + 5x) = 53$

On expanding the brackets, we get

$\Rightarrow (6\times 1) - (6 \times 4x) + (7 \times 2) + (7\times 5x) = 53$

$\Rightarrow 6 - 24x + 14 + 35x = 53$

$\Rightarrow 6 + 14 + 35x - 24x = 53$

$\Rightarrow 20 + 11x = 53$

Subtracting 20 from both sides, we get

$\Rightarrow 20 + 11x - 20 = 53 - 20$

$\Rightarrow 11x = 33$

$\Rightarrow$ Dividing both sides by 11, we get

$\Rightarrow \frac{11x}{11} = \frac{33}{11}$

$\Rightarrow x = 3$

Verification:

Substituting $x = 3$ in LHS, we get

$= 6(1 - 4\times 3) + 7(2 + 5\times 3)$

$= 6(1 - 12) + 7(2 + 15)$

$= 6(-11) + 7(17)$

$= -66 + 119 = 53 = \text{RHS}$

LHS = RHS

Hence, verified.

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