

11/09/2023

H.W

ch-4 Simple equation

* example 78-

Solve

a) $4(m+3) = 18$

b) $-2(x+3) = 8$

* Solution 8-

a) $4(m+3) = 18$

Let's us divide both the Sides by 4 This will remove the bracket

$$m+3 = \frac{18}{4} \text{ or } m+3 = \frac{9}{2} \text{ or}$$

$$m = \frac{9}{2} - 3 \text{ [transporting 3 to RHS] or}$$

$$m = \frac{3}{2} \text{ [required solution] } \left[\frac{9}{2} - 3 = \frac{9}{2} - \frac{6}{2} = \frac{3}{2} \right]$$

check

$$L.H.S = 4 \left[\frac{3}{2} + 3 \right] = 4 \times \frac{3}{2} + 4 \times 3 = 2 \times 3 + 4 \times 3 \text{ [put } m = \frac{3}{2}]$$

b) $-2(x+3) = 8$

We divide both sides by $[-2]$. So as to remove the bracket in the L.H.S, we get,

$$x+3 = -\frac{8}{2} \text{ or } x+3 = -4$$

$$\text{ie } x = -4-3 \text{ [transporting 3 to r.H.S] or } x = -7 \text{ [solution]}$$

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check

$$L.H.S. = 2(7+7) = 2(14)$$

$$= 28 = R.H.S. \text{ or required}$$

* Example 93-

Find a number, such that one-fourth of the number is more than 7.

* Solution:-

* Let us be unknown number to be, one-fourth of it is $\frac{x}{4}$

This number $\left[\frac{x}{4}\right]$ is more than 7 by 3

Hence we get the equation for x as $\frac{x}{4} - 7 = 3$

* To solve this equation, first transpose 7 to R.H.S. we get, $\frac{x}{4} = 3+7=10$

We then multiply both side of the equation by 4 to get

$$\frac{x}{4} \times 4 = 10 \times 4 \quad \text{or } x = 40$$

$$L.H.S. = \frac{40}{4} - 7 = 10 - 7 = 3 = R.H.S.$$

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* Example 8:-

The sum of three times a number and 11 is 32
Find the number.

* Solution :-

* If the unknown number take to be x then three times the number is $3x$ and the sum of $3x$ and 11 is 32
that is, $3x + 11 = 32$

* To solve the equation we transpose 11 to RHS so that

$$3x = 32 - 11 \text{ or } 3x = 21$$

Now divide both sides by 3

$$x = \frac{21}{3} = 7$$

The required number is 7. We check it by taking 3 and adding 11 to it. It gives 32 required ans.]

* Example 10 :-

Raju's father's age is 5 years more than three times Raju's age. Find Raju's age if his father is 44 years old.

Solution :-

As given example 3 earlier the equation

$$3y + 5 = 44$$

$$y = 13$$

$$3y = 44 - 5 = 39$$

* Therefore Raju's age is 13