M8 - 10.7 - LCD " $\frac{x}{a} + \frac{b}{c} = \frac{d}{e}$ " Notes

Solve for x by multiplying each term by the LCD

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

$$2 \times (x - 1) = \frac{1}{2} \times 2$$

$$2x - 2 = 1$$

$$+2 + 2$$

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

LCD = 2

Multiply both sides by 2 Distribute Add 2 to both sides

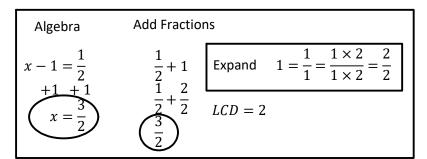
Divide both sides by 2

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

Check Answer $x - 1 = \frac{1}{2}$ $\frac{3}{2} - 1 = \frac{1}{2}$ $\frac{3}{2} - \frac{2}{2} = \frac{1}{2}$ $\frac{1}{2} = \frac{1}{2}$

Short Form $x - 1 = \frac{1}{2}$ 2(x - 1) = 1 2x - 2 = 1 2x = 3 $x = \frac{3}{2}$

OR



Solve for x by multiplying each term by the LCD

$$x - \frac{1}{4} = \frac{1}{2}$$

$$4 \times \left(x - \frac{1}{4}\right) = \frac{1}{2} \times 4$$

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

$$4x - 1 = 2$$

+1 + 14x = 3

$$LCD = 4$$

Multiply both sides by 4 Distribute

Add 1 to both sides

Divide both sides by 4

$$x - \frac{1}{4} = \frac{1}{2}$$

$$\frac{3}{4} - \frac{1}{4} = \frac{1}{2}$$

$$\frac{2}{4} = \frac{1}{2}$$

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

Short Form

$$x - \frac{1}{4} = \frac{1}{2}$$

$$\left(x - \frac{1}{4} = \frac{1}{2}\right) \times 4$$

$$4x - 1 = 2$$

$$4x = 3$$

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

Instead of actually multiplying by the LCD we are going to multiply and simplify at the same time.

Solve for \boldsymbol{x} by multiplying each term by the LCD

$$\frac{x}{2} + \frac{1}{4} = \frac{1}{3}$$

$$\frac{x}{2} + \frac{1}{4} = \frac{1}{3}$$

$$\frac{x}{2} + \frac{1}{4} = \frac{1}{3}$$

$$\frac{12x}{2} + \frac{12}{4} = \frac{12}{3}$$

$$6x + 3 = 4$$

$$-3 - 3$$

$$6x = 1$$

$$6x = 1$$

$$x = \frac{1}{6}$$
Algebra

