Section 2-7
Solving Equations with Rational Numbers

Ex. isolate the variable

$$\boxed{x} - \frac{1}{4} = \frac{3}{16} = \frac{3}{16}$$

$$+\frac{1}{4} \quad +\frac{1\cdot 4}{4\cdot 4} \; \frac{4}{-16}$$

$$x = -\frac{1}{16}$$

$$\frac{3}{16} - \frac{4}{16} = \frac{3-4}{16} = \frac{-1}{16}$$

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Ex $\boxed{x} + 4.25 = 3.75$

$$-4.25 \quad -4.25$$

$$x = -0.50$$

$$4.25 - 3.75 = 0.50$$

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Ex $\frac{1}{5}\boxed{x} = 3$

$\left(\frac{5}{1}\right)\left(\frac{1}{5}x\right) = (3)5$

$x = 15$

when we have fractions multiplied by a variable, to eliminate it, multiply by its reciprocal. (flip the numerator & denominator)

$\frac{5}{2}\left(\frac{2}{5}\boxed{x}\right) = \left(\frac{1}{2}\right)\frac{5}{2}$

$x = \frac{1 \cdot 5}{2 \cdot 2} = \frac{5}{4}$ or $1\frac{1}{4}$

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