

## Solving Type II Equations

### Lesson 29

- **Type II equations** require us to do two opposite or inverse operations to solve for the variable (letter i.e. x)
  - Always do the opposite of any **addition** or **subtraction** first
  - Then proceed to do the inverse operation of any **multiplication** or **division**

#### EXAMPLE 1:

$$5x - 9 = 8$$

$$5x - \cancel{9} + 9 = 8 + 9$$

$$\frac{5x}{5} = \frac{17}{5}$$

$$\boxed{x = 3\frac{2}{5}}$$

$$\text{OR } \boxed{x = 3.4}$$

#### EXAMPLE 2:

$$4x + 8 = 4$$

$$4x + \cancel{8} - 8 = 4 - 8$$

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

$$\boxed{x = -1}$$

EXAMPLE 3:

$$\frac{x}{5} + 7 = 9.3$$

$$\frac{x}{5} + \cancel{7} - 7 = 9.3 - 7$$

$$\frac{x}{5} = 9.3 - 7$$

$$\cancel{(\div)} \frac{x}{\cancel{5}} = 2.3 \quad (5)$$

$$\boxed{x = 11.5}$$

EXAMPLE 4:

$$12 = \frac{x}{8} + 5$$

$$12 - 5 = \frac{x}{8} + \cancel{5} - 5$$

$$\cancel{(8)} 7 = \frac{x}{\cancel{8}} \quad (\cancel{8})$$

$$\boxed{56 = x}$$