# Curriculum Outcomes:

**PR1: . Generalize a pattern arising from a problem-solving context using linear equations and verify by substitution.**

**PR3. Model and solve problems using linear equations of the form:**

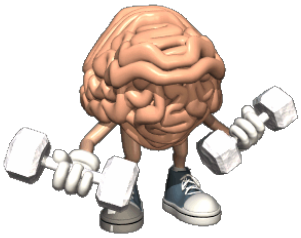
***ax* = *b;* = b , a ≠ 0; *ax* + *b* = *c*; +*b* = *c,* a ≠ 0; = *b*, *x* ≠ 0 ax ax xa**

***ax*+ *b* = *cx* + *d; a(bx* + *c)* = *d(ex* + *f); a(x* + *b)* = *c; ax* = b+*cx***

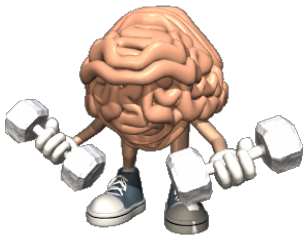
**concretely, pictorially and symbolically, where*a, b, c, d, e, and f* are rational numbers**

**Student Friendly:**

**"Solving for an unknown variable using opposite operations"**



# Warm Up

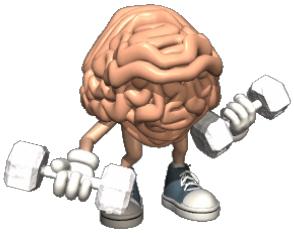


DETERMINE THE VALUE OF EACH LETTER:

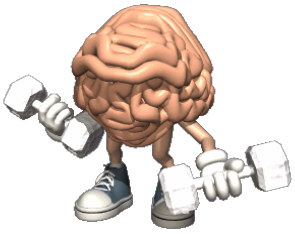
$$P + X - Y = 19$$

$$P - X = 8$$

$$X - Y = 7$$



# Warm Up



DETERMINE THE VALUE OF EACH LETTER:

1) $P + X - Y = 19$

$P + 7 = 19$

$P = 12$

2) $P - X = 8$

$12 - x = 8$

$x = 4$

3) $X - Y = 7$

$4 - y = 7$

$4 - (-3)$

$7$

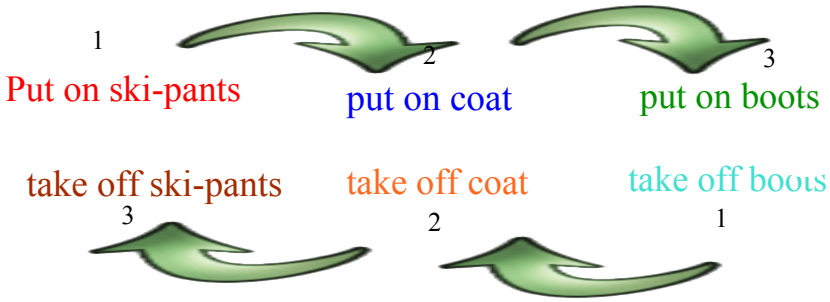
$y = -3$

# Section 6.1

## Solving Equations by Using Inverse Operations

Tim is 3 and he is getting ready to go play in the snow.
When he gets ready he follows the same process each day.

When he goes inside he does eveything in reverse.
What is that process?



# Inverse Operations

Inverse operations is to do the opposite
(undo or reverse each other's result)

Addition and subtraction are inverse operations

Multiplication and division are inverse operations

Let's think

# You have to show work!


## Algebraic Solution

**"Solving for an unknown variable using opposite operations"**

Start with x....(What operations is applied to x?)

$$x + 5 = 8$$

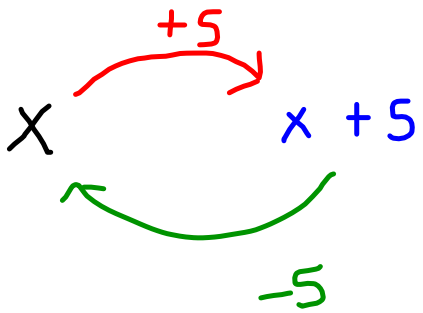
$$-5 \quad -5$$

$$x = 3$$

# Build the equation

X+5=11

**Inverse Operation**



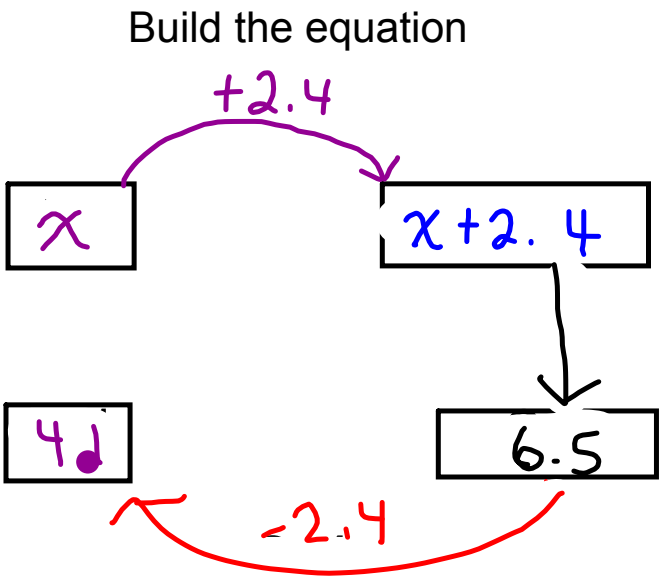
# In the textbook they do Build Equations, Solve Equations

For example:

x + 2.4 = 6.5

$x + 2.4 = 6.5$ $-2.4$ $-2.4$

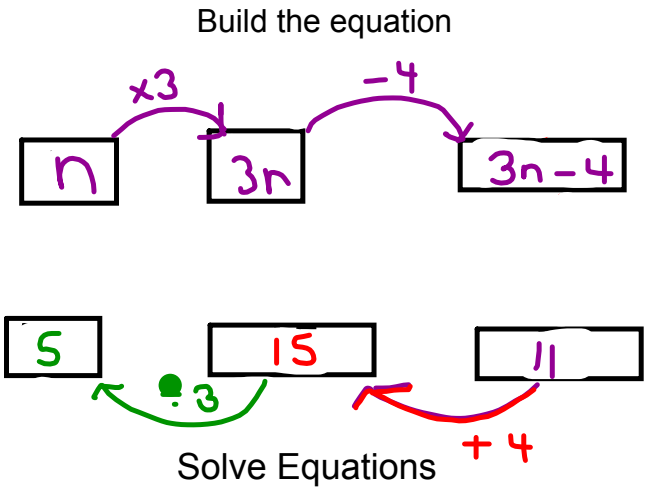
$x = 4.1$



# In the textbook they do Build Equations, Solve Equations

For example:

$3n - 4 = 11$




$3n - 4 = 11$ (+4, +4)

$\frac{3n}{3} = \frac{15}{3}$

$n = 5$

$2x - 4 = 12$

$+4 \quad +4$

$\frac{2x}{2} = \frac{16}{2}$

$x = 8$

$5x - 7 = -17$

$+7 \quad +7$

$\frac{5x}{5} = \frac{-10}{5}$

$x = -2$

# Solving One-Step Equations

Write and solve an equation to determine each number.

a) 5 times a number is 16

$\frac{5n}{5} = \frac{16}{5}$

$n = 3.2$

b)A number divide by 7 is 4.5

$\frac{n}{7} \times 7 = 4.5 \times 7$

$n = 31.5$