Name: **Stew Dent** **Period A/D/G**
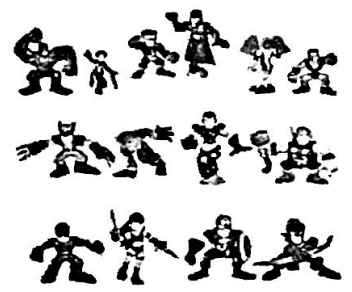
Solving One-Step Equations: Addition and Subtraction

How can you get the variable alone in an addition equation?

Ex: Greg has x plastic figures. After he bought 7 more figures, he had 25. How many plastic figures did Greg have?

$$X + 7 = 25$$

To get the variable, x, alone, use the inverse operation.

What is the inverse operation of addition? **Subtraction**

inverse operations "un-do" one another.

$$X + 7 = 25$$
$$-7 \quad -7$$
$$\boxed{X = 18}$$

what you do to one side you do to the other

Subtract 7 from both sides.
This will leave x alone.

To check, substitute **18** for x.

ch $X + 7 = 25$
$18 + 7 = 25$
$25 = 25$ ✓

* To keep an equation balanced, the **Subtraction Property of Equality** allows you to subtract the same amount from both sides of the equation.

You try:

1) $m + 17 = 78$
$-17 \quad -17$
$\boxed{m = 61}$
ch $61 + 17 = 78$ ✓

2) $y + 56 = 109$
$-56 \quad -56$
$\boxed{y = 53}$
ch $53 + 56 = 109$ ✓

3) $56.4 + b = 342.6$
$-56.4 \quad -56.4$
$\boxed{b = 286.2}$
ch $56.4 + 286.2 = 342.6$ ✓

$$\overset{2 \ 13}{\cancel{3}\cancel{4}2.6}$$
$$- \ 56.4$$
$$286.2$$

How can you get the variable alone in a subtraction equation?

Ex: Nina buys lunch for herself and her sister. She pays $7.00. Nina has $5.00 left over. Solve using the equation b - $7.00 = $5.00 to find out how much money Nina started with.

$$b - \$7.00 = \$5.00$$

To get the variable, b, alone, use the inverse operation.

What is the inverse operation of subtraction? __addition__

Add $7.00 to both sides. This will leave b alone.

$$b - \$7.00 = \$5.00$$
$$+7 \qquad +7$$
$$\boxed{b = 12}$$

To check, substitute b for __12__.

ch) $b - 7 = 5$
$12 - 7 = 5$
$5 = 5$ ✓

* To keep an equation balanced, the **Addition Property of Equality** allows you to add the same amount to both sides of an equation.

You try:

1) $y - 12 = 89$
$$+12 \quad +12$$
$$\boxed{y = 101}$$
ch) $101 - 12 = 89$ ✓

2) $x - 67 = 123$
$$+67 \quad +67$$
$$\boxed{x = 190}$$
ch) $190 - 67 = 123$ ✓

3) $z - 31.3 = 17.6$
$$+31.3 \quad +31.3$$
$$\boxed{z = 48.9}$$ ✓
ch) $48.9 - 31.3 = 17.6$