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?

1 Put on ski-pants → 2 put on coat → 3 put on boots

3 → 2 → 1

Section 6.1

Solving Equations by Using Inverse Operations

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!

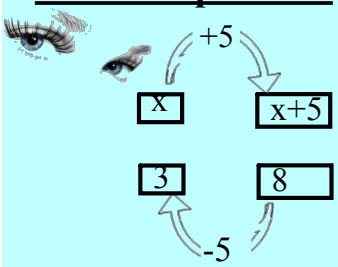
Start with x....(What operations is applied to x?)

_____

Apply the inverse operation on 8 to isolate x, that is_____

to get

Inverse Operation



Algebraic Solution

$x + 5 = 8$

undo the addition
subtract each side by 5

$x + 5 - 5 = 8 - 5$

$x = 3$

Solving One-Step Equations

Write and solve an equation to determine each number.

a) 5 times a number is 16

- Let x be the number

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

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

b) A number divide by 7 is 4.5

- Let k be the number

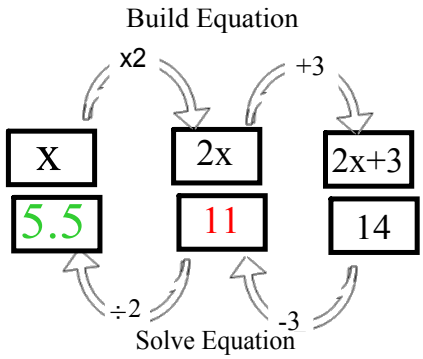
$$\frac{k}{7} = 4.5$$

$$7\left(\frac{k}{7}\right) = 7(4.5)$$

$k = 31.5$

The Two-Step Equation

$2x + 3 = 14$



Visually

To build this equation

Start with x

Times x by 2

Add 3

To solve for x

Start with 14

subtract 3

divide by 2

You will be expected to show work using the algebraic method.

ALGBRAIC SOLUTION

$2x + 3 = 14$
$2x + 3 - 3 = 14 - 3$
$2x = 11$

$\frac{2x}{2} = \frac{11}{2}$

$x = 5.5$

Always verify your work

Verify just means check

∴ Therefore

How?????

Sub your answer into the left hand side of your equation and see it it equals the right hand side

sub x = 5.5 into the LHS

LS ~~LHS~~ = RS RHS

$2x + 3 = 14$

$2(5.5) + 3$

$11 + 3$

14

LHS = RHS so we are right

LS = RS ∴ x = 14

You try

1) $-2w + 6 = -30.8$

$-2w + 6 - 6 = -30.8 - 6$

$\frac{-2w}{-2} = \frac{-36.8}{-2}$

$w = 18.4$

2) $\frac{b}{-5} - 7 = 15.8$

$\frac{b}{-5} - 7 + 7 = 15.8 + 7$

$-5\left(\frac{b}{-5}\right) = (22.8)-5$

$b = -114$

3) $7 = \frac{n}{4} - 15.6$

$7 + 15.6 = \frac{n}{4} - 15.6 + 15.6$

$22.6 = \frac{n}{4}$

$4(22.6) = \frac{n}{4}(4)$

$90.4 = n$

3) $7 = \frac{n}{4} - 15.6$

$7 + 15.6 = \frac{n}{4} - 15.6 + 15.6$

$4(22.6) = \left(\frac{n}{4}\right)4$

$90.4 = n$

Check

LS	RS
7	$\frac{n}{4} - 15.6$
	$\frac{90.4}{4} - 15.6$
	$22.6 - 15.6$
	7

LS = RS $\therefore$ n = 90.4 ✓

Class Work
and
Finish for Homework

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5. a)