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: "Rearranging an equation to get all the variables by themselves"

1) Write an equation and then solve:

a) six times a number is -33.6

$6(x) = -33.6$

$\frac{6(x)}{6} = \frac{-33.6}{6}$

$x = -5.6$

b) a number divided by -3 is 45.6

$x \div (-3) = 45.6$

$x \div (-3) \times (-3) = 45.6 \times (-3)$

$x = -136.8$

c) a number multiplied by 7 add to 6 is 65.5.

$6 + 7x = 65.5$

$-6 \quad -6$

$\frac{7x}{7} = \frac{59.5}{7}$

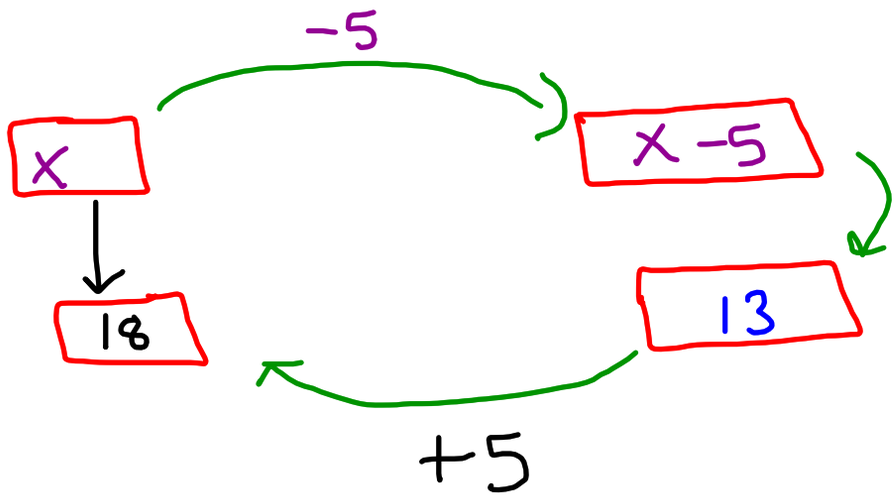
$x = 8.5$

$x - 5 = 13$ (+5 to both sides)

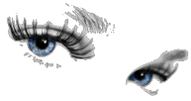
$x = 18$

Build an equation

$x - 5 = 13$

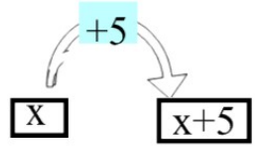


Build the equation



X+5=11

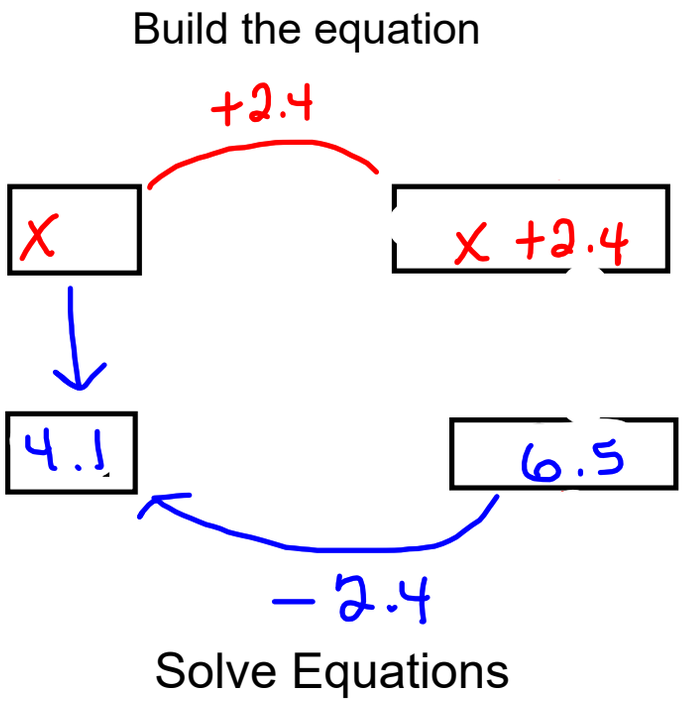
Inverse Operation



In the textbook they do Build Equations, Solve Equations

For example:

$x + 2.4 = 6.5$



Easier:

$x + 2.4 = 6.5$ (−2.4, −2.4)

$x = 4.1$

The Two-Step Equation

$$2x + 3 = 14$$

$-3 \quad -3$

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

$$x = 5.5$$

Verify: (check work)

LH

$2x + 3$

$2(5.5) + 3$

$11 + 3$

14

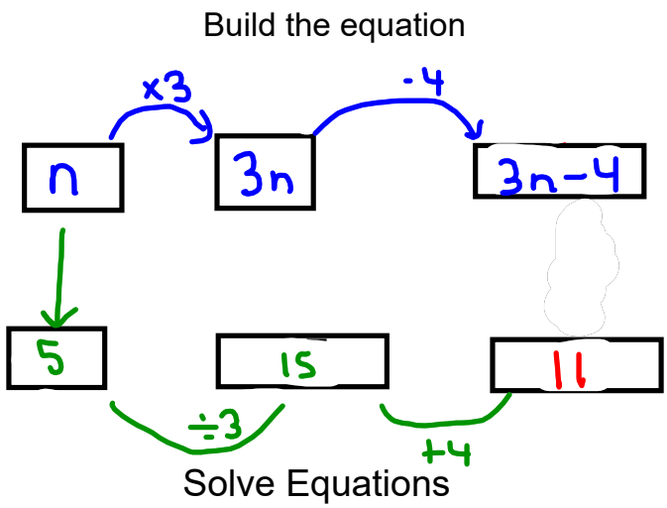
RH

14

In the textbook they do Build Equations, Solve Equations

For example:

$3n - 4 = 11$



Easier:

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

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

$n = 5$

The Two-Step Equation

$2x + 3 = 14$

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

Verify your work:

Verify just means check

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

LHS = RHS

$2x + 3 = 14$

$2(5.5) + 3$

$11 + 3$

14

LHS = RHS so we are right

INVERSE PROPERTY:

This property occurs when a mathematical operation is "undone". For example, subtraction "undoes" addition and division "undoes" multiplication. Algebra is based on this property. We sometimes say that we use the "method of inverse operations" to solve algebraic equations.

Use inverse operations to solve for "x":

$$13 = 7 + 3x$$

$-7 \quad -7$

$$\frac{6}{3} = \frac{3x}{3}$$

$$2 = x$$

or

$$x = 2$$

$$-14 = -2w + 6$$

-6 -6

$$\frac{-20}{-2} = \frac{-2w}{-2}$$

$$10 = w$$

Verify

LH

-14

RH

$-2w + 6$

$-2(10) + 6$

$-20 + 6$

-14

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

$$28 = \frac{n}{4} - 62.4 \quad \overset{+62.4}{\overset{+62.4}{}}$$

$$90.4 = n$$

Ver:

LH

7

RH

$\frac{n}{4} - 15.6$

$\frac{90.4}{4} - 15.6$

$22.6 - 15.6$

7

Solve

$$\frac{3x - 1}{2} = 7$$

$$\frac{3x}{2} - \frac{1}{2} = 7$$

$$3x - 1 = 14$$

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

$$x = 5$$

LH	RH
$\frac{3x-1}{2}$	7
$\frac{3(5)-1}{2}$	
$\frac{15-1}{2}$	
$\frac{14}{2}$	
7	

$$\frac{2x - 4}{3} = 2$$

$$\frac{2x}{3}^{(3)} - \frac{4}{3}^{(3)} = 2^{(3)}$$

$$2x - 4^{+4} = 6^{+4}$$

$$\frac{2x}{2} = \frac{10}{2}$$

$$x = 5$$

Class Work
and
Finish for Homework

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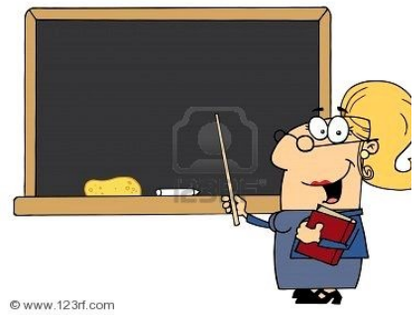

8(all), #9(ab) , #10(abcd),