Lesson 5

Equations with several variables are called <u>literal equations</u>. At times you will need to solve a literal equation for one of their variables. To do this, the terms with the variable(s) you need and move <u>everything else</u> to the other side.

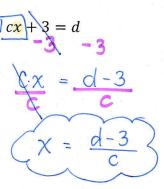
Solve each for x.

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

$$c = -d + x$$

$$x + c = -d$$

$$x = -d - c$$



Solve
$$5b + 12c = 10$$
 for b.

$$\frac{5b}{5} = \frac{10 - 12c}{5}$$

$$b = 2 - \frac{12c}{5}$$

Solve
$$4m - 3n = 8$$
 for m .

$$m = 8 + 3n$$
 $m = 2 + 3n$
 4

Solve
$$p + qx = r$$
 for x.

$$X = \frac{r - \rho}{q} \text{ or } \frac{\Gamma}{q} - \frac{\rho}{q}$$

Write each of the following in function form (y is a function of x)

$$2x + 2y = 10$$

$$2x = 10 - 2x$$

$$y = 5 - x$$

$$y = -x + 5$$

$$3 + 3y = 9 - 6x$$

$$3 = 6 - 6x$$

$$y = 2 - 2x$$

$$30 = 9x + 5y = 150$$
 at $5y + 30 = 9x - 30$ $5y + 30 = 9x - 30$ $5y = 9x - 30$

Challenge

Solve
$$xy + 7 = n$$
 for y .
A $y = xn - 7$ $y = x(n - 7)$
B $y = \frac{n - 7}{x}$ D $y = \frac{1}{x}(n + 7)$

application

Forensicists and archaeologists both use the following equation to find the height, h, of a female depending on the length of their humerus, H, in centimeters.

How can the equation be rewritten to solve for the length of their humerus, H? (isolate H)

$$h-64.98 = 3.14 H$$
 3.14
 $h-64.98 = H$
 3.14

If a woman has a height of 66.55 what is the length of their humerus?

-plug in for h.

$$66.55 - 64.98 = H$$
 3.14
 $0.5 = H$