

BE-1A MONDAY 11-2-09

① SOLVE $X - 2 = -9$

② SOLVE $3X + 4 = 6$

③ SOLVE $5X + 1 = 2X - 4$

④ SOLVE $\frac{7}{X} = \frac{2}{4}$

⑤ DON'T SOLVE, BUT WHAT IS THE PROBLEM IF I ASK YOU TO SOLVE:

$$-3X + Y = 2X + 5$$

THERE ARE TWO VARIABLES,
X AND Y! WHICH ONE DO YOU
WANT TO "GET BY ITSELF"?

Since there is MORE THAN ONE variable, I have to tell you which one to solve for. For example, if I want y by itself:

Solve $-3x + y = 2x + 5$ for y

$$+3x \qquad +3x$$

$$\boxed{y = 5x + 5}$$

↑
You HAVE to include this

↑
 y is "by itself"

↑ ↑
there are
X terms and
numbers on the
"other side"

Solving for a variable when there are more than one is usually EASIER, there is less Arithmetic.

Solve:

$$-3x + y = 2x + 5 \quad \text{for } x$$

$$+3x$$

$$+3x$$

$$y = 5x + 5$$

$$-5$$

$$-5$$

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

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

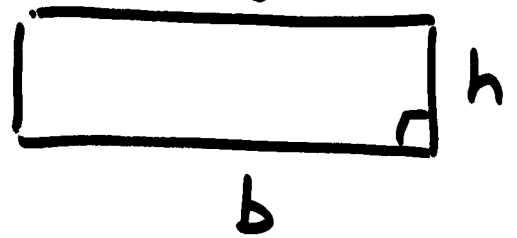
$$\boxed{x = \frac{y-5}{5}}$$

OK to leave
Answer like
this...

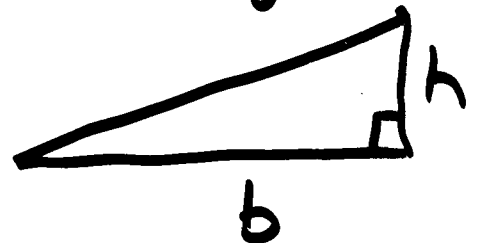
Formula

AN EQUATION THAT STATES
A RELATIONSHIP BETWEEN
REAL PROPERTIES.

ⓔx $A = bh$ Area of rectangle
 $b = \text{base}$
 $h = \text{height}$



ⓔx $A = \frac{1}{2}bh$ Area of triangle
 $b = \text{base}$
 $h = \text{height}$



ⓔx $E = mc^2$

ⓔx $F = ma$

ⓔx $E = IR$ Right angle = 90°



Formulas usually have one common way to write them, but they can be written one way for each variable.

(EX) $d = rt$ distance equals rate times time.
 Common way to write it is "solved for d"

$$\frac{d}{r} = \frac{rt}{r} \text{ for } t$$

$$\boxed{\frac{d}{r} = t} \text{ or } \boxed{t = \frac{d}{r}} \text{ second way}$$

$$\frac{d}{t} = \frac{rt}{t} \text{ for } r$$

$$\boxed{\frac{d}{t} = r} \text{ or } \boxed{r = \frac{d}{t}} \text{ third way}$$

Units must match in formulas.

$$\textcircled{\text{Ex}} \quad d = r t \quad \text{miles} = \frac{\text{miles}}{\text{hour}} \cdot \text{hour}$$

$$r = \frac{d}{t} \quad \frac{\text{miles}}{\text{Hour}} = \frac{\text{miles}}{\text{hour}}$$

$$t = \frac{d}{r} \quad \text{hours} = \frac{\text{miles}}{\frac{\text{miles}}{\text{hour}}}$$

$$\left\{ \frac{\text{miles}}{1} \cdot \frac{\text{hour}}{\text{miles}} \right\} \checkmark$$

$$\text{Solve: } C = \frac{2\pi r}{2\pi} \text{ for } r$$

$$\frac{C}{2\pi} = r \quad \text{or} \quad \boxed{r = \frac{C}{2\pi}}$$

Ch 3-8 Solving Equations AND Formulas

EX 1
Pg 166

Solve $3x - 4y = 7$ for y

$$-3x$$

$$-3x$$

$$-4y = -3x + 7$$

Look $\Rightarrow$

$\uparrow$
put x term
first

$$\frac{-4y}{-4} = \frac{-3x + 7}{-4}$$

$$y = \frac{-3x + 7}{-4} \cdot \frac{-1}{-1}$$

Look $\Rightarrow$

$\uparrow$
DON'T LEAVE $\ominus$ in bottom

$$y = \frac{3x - 7}{4}$$

$$\textcircled{\text{EX}} \quad -3x + b = 6x \text{ for } x$$

$$\quad \quad \quad +3x \quad \quad \quad +3x$$

$$\frac{b}{9} = \frac{9x}{9}$$

$$\boxed{\frac{b}{9} = x}$$

$$\underline{\underline{\text{OR}}} \quad -3x + b = 6x$$

$$\quad \quad \quad -6x \quad \quad \quad -6x$$

$$-9x + b = 0$$

$$\quad \quad \quad -b \quad \quad \quad -b$$

$$\frac{-9x}{-9} = \frac{-b}{-9}$$

$$\boxed{x = \frac{b}{9}}$$

Homework: Pg 168 # 13-18