

Warm Up

10/4/18

1. Solve: $12(x - 4) + 3 = 2(6x + 5)$

$$\begin{aligned} 12x - 48 + 3 &= 12x + 10 \\ 12x - 45 &= 12x + 10 \\ -12x &\quad -12x \\ \hline -45 &= 10 \\ \boxed{\emptyset} \end{aligned}$$

2. Translate into a verbal expression:

$$4(15 - x) + 7$$

Four times the difference of 15 and a number plus seven

3. Solve:

$$(8) \frac{7}{8}x - 5 = \frac{1}{2}x + 9$$

$$\begin{aligned} 7x - 40 &= 4x + 72 \\ -4x &\quad -4x \\ \hline \end{aligned}$$

$$\begin{aligned} 3x - 40 &= 72 \\ +40 &\quad +40 \\ \hline \end{aligned}$$

$$\frac{3x}{3} = \frac{112}{3}$$

$$\boxed{x = \frac{112}{3}}$$

$$A=lw$$

$$2wv=y$$

Literal Equations

$$2f = g$$

$$ab=\frac{c}{2}$$

MULTI-VARIABLE EQUATIONS (Literal Equations)

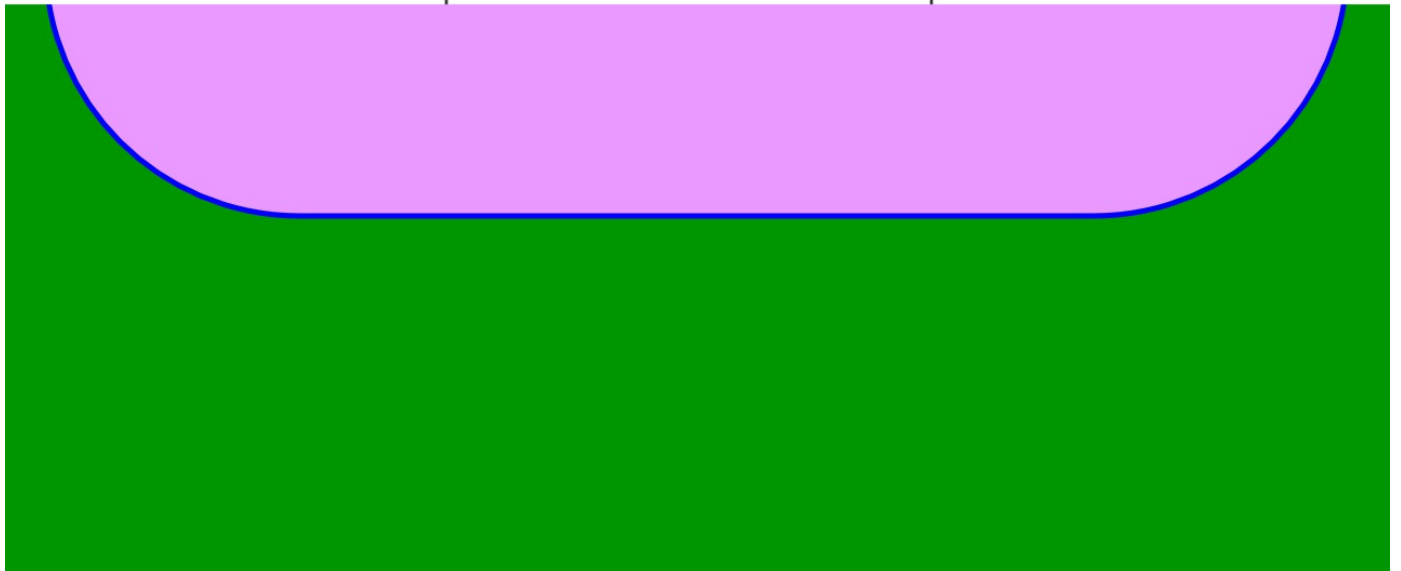
SOLVE EACH OF THE EQUATIONS BELOW FOR x :

$$\begin{array}{r}
 2x - 5 = 13 \\
 +5 \quad +5 \\
 \hline
 2x = 18 \\
 \frac{2x}{2} = \frac{18}{2} \\
 x = 9
 \end{array}$$

$$\begin{array}{r}
 ax - b = c \\
 +b \quad +b \\
 \hline
 ax = b + c \\
 \frac{ax}{a} = \frac{b+c}{a} \\
 x = \frac{b+c}{a}
 \end{array}$$

ONE STEP PROBLEMS

$\frac{A}{\cancel{l}} = \frac{\cancel{l}w}{\cancel{l}}$ $w = \frac{A}{l}$	$\frac{A}{\cancel{b}} = \frac{\cancel{b}h}{\cancel{b}}$ $h = \frac{A}{b}$	$\frac{d}{\cancel{r}} = \frac{\cancel{r}t}{\cancel{r}}$ $t = \frac{d}{r}$
$\frac{I}{\cancel{r}} = \frac{\cancel{r}t}{\cancel{Pr}}$ $t = \frac{I}{Pr}$	$\frac{V}{\cancel{l}w} = \frac{\cancel{l}wh}{\cancel{l}w}$ $h = \frac{V}{lw}$	$\frac{C}{\cancel{2\pi}} = \frac{\cancel{2\pi}r}{\cancel{2\pi}}$ $r = \frac{C}{2\pi}$
$\frac{m}{\cancel{s}} = \frac{\cancel{s} + t}{\cancel{s}}$ $c = m + s$	$\frac{A}{\cancel{r^2}} = \frac{\cancel{r^2}\pi}{\cancel{r^2}}$ $\pi = \frac{A}{r^2}$	$\frac{D}{\cancel{v}} = \frac{\cancel{v}m}{\cancel{v}}$ $m = Dv$



Multi-Step Problems

tips to help:

- Think backwards PEMDAS
- Remove fractions by multiplying by the reciprocal.
- Last step is USUALLY to divide by whatever is next to your variable.

$A = \frac{1}{2}bh$ (2) solve for h $\frac{2A}{b} = \frac{bh}{b}$ $h = \frac{2A}{b}$	$V = \frac{1}{3}Bh$ (3) solve for B $\frac{3V}{h} = \frac{Bh}{h}$ $B = \frac{3V}{h}$	$K = \frac{mv^2}{2}$ (2) solve for m $\frac{2K}{v^2} = \frac{mv^2}{v^2}$ $m = \frac{2K}{v^2}$
$a = \frac{b+c}{d}$ (4) solve for b $ad = b+c$ $-c$ $b = ad - c$	$P = 2L + 2W$ solve for W $\frac{P-2L}{2} = \frac{2W}{2}$ $W = \frac{P-2L}{2}$	$Ax + By = C$ solve for y $-Ax$ $\frac{By}{B} = \frac{-Ax+C}{B}$ $y = \frac{-Ax+C}{B}$

✓

16. $y = mx + b$ solve for x

$$\begin{array}{r} -b \quad -b \\ y - b = mx \\ \hline \frac{y - b}{m} = \frac{mx}{m} \\ x = \frac{y - b}{m} \end{array}$$

17. $A = P + Prt$ solve for t

$$\begin{array}{r} -P - P \\ A - P = Prt \\ \hline \frac{A - P}{Pr} = \frac{Prt}{Pr} \\ t = \frac{A - P}{Pr} \end{array}$$

18. $s = n(a + 1)$ solve for a

$$\begin{array}{r} \frac{s}{n} \quad \frac{s}{n} \\ \frac{s}{n} = a + 1 \\ \hline \frac{-1}{a} = \frac{s}{n} - 1 \end{array}$$

19. Solve $C = \frac{5}{9}(F - 32)$ for F

$$\begin{array}{r} \frac{9}{5}C = F - 32 \\ \hline \frac{9}{5}C + 32 = F - 32 + 32 \\ F = \frac{9}{5}C + 32 \end{array}$$

20. Solve $A = \frac{1}{2}h(b_1 + b_2)$ for b_1

$$\begin{array}{r} A(2h) = b_1 + b_2 \\ \hline A(2h) - b_2 = b_1 \end{array}$$

solve for z

$$\frac{a}{x} = \frac{\cancel{x} z^2}{\cancel{x}}$$

$$\sqrt{\frac{a}{x}} = \sqrt{z^2}$$

$$\boxed{z = \sqrt{\frac{a}{x}}}$$

$$5^2 = 25$$

$$\sqrt{25} = 5$$