

Warm-up

Tuesday 9/10

1. $\left(\frac{5}{4}x + 7 = \frac{3}{4}x + 3\right) 4$

$$\begin{array}{r} 5x + 28 = 3x + 12 \\ -12 \quad -12 \\ \hline \end{array}$$

$$\begin{array}{r} 5x + 16 = 3x \\ -5x \quad -5x \\ \hline 16 = -2x \\ \frac{16}{2} = \frac{-2x}{2} \\ 8 = -x \end{array} \quad \boxed{x = -8}$$

2. $3(2x - 1) - 5 = 4 + 8x$

$$\begin{array}{r} 6x - 3 - 5 = 4 + 8x \\ -6x \quad -6x \\ \hline \end{array}$$

$$\begin{array}{r} -8 = 4 + 2x \\ -4 \quad -4 \\ \hline -12 = 2x \\ \frac{-12}{2} = \frac{2x}{2} \\ \boxed{-6 = x} \end{array}$$

Clear your desk. You need a pencil only!



Literal Equations

A Literal Equation is an equation that has more than one variable.

The most common literal equations are formulas.

Examples: $y=mx+b$ $3x-5y=z$ $C=2\pi r$



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To solve for a given variable, would mean getting the variable to one side of the equal sign and everything else on the other side.

$$y = mx + b$$

Solved for y



$$3x - 5y = z$$

Solved for z



$$C = 2\pi r$$

Solved for C



Literal Equations can be solved for a different variable by using inverse operations. Inverse operations help rearrange the equation to solve for a different variable.



Let's Try Some!

Solve the following for x.

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

subtract b on both sides
divide by m on both sides



Area of a
triangle

Solve the following for h.

$$2(A = \frac{1}{2}bh)$$

$$\frac{2A}{b} = \frac{bh}{b}$$

$$\frac{2A}{b} = h$$

multiply by
2
divide by b



Solve the following for t.

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



Solve the following for r.

$$\frac{C}{2\pi} = \frac{2\pi r}{2\pi}$$

divide by 2π

$$\frac{C}{2\pi} = r$$



Solve the following for x.

$$\begin{array}{r|l} 3x - 5y = z & \\ +5y & +5y \\ \hline 3x = z + 5y & \\ \frac{3x}{3} = \frac{z + 5y}{3} & \\ \boxed{x = \frac{z + 5y}{3}} & \end{array}$$







