

## Solving for x: Lesson 14

### Literal Formulas 2: Notes

Name: Answer Key!



#### Solving complex literal equations:

1. Get the target variable out of any parentheses by using the distributive property.
2. Get the target variable out of the denominator by using multiplication.
3. Move all target variable terms to one side and the others to the other side.
4. Factor out the target variable from the one side.
5. Divide both sides by what is left over to get the target variable by itself.

Solve  $xa + 2a = 7b$  for  $a$ .

$$\begin{aligned} xa + 2a &= 7b \\ a(x+2) &= 7b \\ \frac{a(x+2)}{x+2} &= \frac{7b}{x+2} \\ a &= \frac{7b}{x+2} \end{aligned}$$

Solve  $9h = \frac{2+3i}{i}$  for  $i$

$$\begin{aligned} i \cdot 9h &= \frac{2+3i}{i} \cdot i \\ 9hi &= \frac{2+3i}{\cancel{i}} \cdot \cancel{i} \\ 9hi &= \frac{2+3i}{1} \\ \frac{9hi-3i}{-3i} &= \frac{2}{-3i} \\ i(9h-3) &= \frac{2}{-3i} \\ \frac{i(9h-3)}{9h-3} &= \frac{2}{9h-3} \\ i &= \frac{2}{9h-3} \end{aligned}$$

Solve  $a(5x-3c) = d(rx-9)$  for  $x$

$$\begin{aligned} 5ax - 3ac &= d\cancel{rx} - 9d \\ \frac{5ax - 3ac}{-d\cancel{rx} + 3ac} &= \frac{d\cancel{rx} - 9d}{-d\cancel{rx} + 3ac} \\ 5ax - d\cancel{rx} &= \frac{3ac - 9d}{5a - dr} \\ x(5a - dr) &= \frac{3ac - 9d}{5a - dr} \\ x &= \frac{3ac - 9d}{5a - dr} \end{aligned}$$