2.6 Formulas

We have been solving equations for a week now. We have used the inverse properties of multiplication and addition to get the variable isolated on one side of the equals sign.

We are now going to use this same idea with formulas containing multiple variables. We can still use the inverse properties, so we're just changing what the answer looks like, not the process.

Solve the perimeter formula for the width.

This means, instead of having P by itself, we want to have w by itself.

Start with the perimeter formula $P = 2(L + w)$

"Undo" the operations in reverse order

$$\frac{P}{2} = L + w$$
$$-L \quad -L$$

Remember, you can multiply any variables together, but you can only add or subtract like terms.

$$\frac{P}{2} - L = w$$

Solve $y - 4 = 3x - 8$ for x.

$+8 \quad +8$

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

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

Solve $m - hp = d$ for p.

$-m \quad -m$

$$\frac{-hp}{-h} = \frac{d-m}{-h}$$

$$p = \frac{d-m}{-h}$$

$$p = \frac{-d}{h} + \frac{m}{h}$$

You can use the number of chirps *n* a cricket makes in one minute to estimate the outside temperature *F* in degrees Fahrenheit. Transform the formula $F = \frac{n}{4} + 37$ to find the number of chirps in terms of temperature.

$$4 \cdot (F - 37) = \frac{n}{4} \cdot 4$$
$$4F - 148 = n$$

How many chirps can you expect if the temperature is 60°F?

$$4(60) - 148 = n$$
$$92 = n$$

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