

Study Guide

Solving Equations and Formulas

If an equation that contains more than one variable is to be solved for a specific variable, use the properties of equality to isolate the specified variable on one side of the equation.

Example: Solve $ax - b = c$ for x .

$$ax - b = c$$

$$ax - b + b = c + b \quad \text{Add } b \text{ to each side.}$$

$$ax = c + b$$

$$\frac{ax}{a} = \frac{c + b}{a} \quad \text{Divide each side by } a.$$

$$x = \frac{c + b}{a} \quad a \neq 0$$

Solve for x .

1. $15x + 1 = y$

2. $x + 45z = 90$

3. $(x + f) + 2 = j$

4. $xy + z = 9$

5. $x(4 - k) = p$

6. $7x + 3y = m$

7. $2x + b = c$

8. $x(1 + y) = z$

9. $16z + 4x = y$

10. Health The formula $H = \frac{34 - A}{2}$ is sometimes used to relate a person's age, A , to the number of hours of sleep they need every day, H .

- Does this formula work for you? If not, why not?
- For what ages does the formula seem to work best?
- Solve the formula for A .
- How old is a person who is getting his or her optimal amount of sleep, 8 hours per day?