

Algebra I

Notes Section 24

Solve Multi-Step Equations

Big Ideas

1. How to solve multi-step equations using subtraction, addition, division and multiplication.
2. How to use inverse properties and reciprocals to solve equations.

EXAMPLE 1 Solve by combining like terms.

a) $8x - 3x - 10 = 20$

b) $9x + x - 7 = 13$

EXAMPLE 2 Solve by using the distributive property.

a) $7x + 2(x + 6) = 39$

b) $5x - 4(x - 3) = 17$

c) $2w + 3(w + 4) = 27$

d) $6x - 2(x - 5) = 46$

EXAMPLE 3 Multiply by the reciprocal to solve.

a) $\frac{3}{2}(3x + 5) = -24$

b) $\frac{3}{4}(z - 6) = 12$

c) $\frac{2}{5}(3r + 4) = 10$

d) $-\frac{4}{5}(4a - 1) = 28$

EXAMPLE 4 You are planning a scavenger hunt for 21 campers. You plan to have 5 teams. One camper from each will be the recorder and the rest will be searchers. **How many searchers will each team have?**

$$\# \text{ of campers} = \# \text{ of teams} \quad X \quad \# \text{ of campers/team}$$