

Solving linear equations and inequalities

Student Activity Sheet 2; use with *Exploring* “Solving linear equations”

1. Solve the equation $x + 2 = 7$ algebraically, using two different methods.

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Describe how the processes are similar, and how they are different.

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Use algebra tiles to model the process of solving each equation in questions 2, 3, and 4. Sketch each step of the model, and record each step using symbols.

2. $x + 5 = 10$

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Solving linear equations and inequalities

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3. $8 = x - 3$

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Solving linear equations and inequalities

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4. $5 - x = 7$

Solving linear equations and inequalities

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5. Solve the equation $15d = 300$ algebraically, using two different methods.

6. **REINFORCE** Use algebraic operations to solve the equations.

a. $\frac{1}{3}z = -2$

b. $6y = 3$

7. How can you use a combination of inverse operations to help you solve the equation $5x + 7 = 22$?

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8. Justify each step in the solution of the equation $5x + 7 = 22$.

$5x + 7 = 22$	
$5x + 7 + (-7) = 22 + (-7)$	
$5x + [7 + (-7)] = 22 + (-7)$	
$5x + 0 = 22 + (-7)$	
$5x = 22 + (-7)$	
$5x = 15$	
$\frac{5x}{5} = \frac{15}{5}$	
$1x = 3$	
$x = 3$	

9. Use algebraic operations to solve the equation $29.95 + 0.16m = 75$.

10. **REINFORCE** Solve $x - 12 = 7$ using algebraic operations.

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11. **REINFORCE** Solve $9 - x = 10$ using algebraic operations.

12. **REINFORCE** Solve $2x - 5 = 3$ using algebraic operations.