

# 5-6 Solving Equations (Pages 248–250)

You can solve rational number equations using the same skills you used to solve equations involving integers.

<b>Solving Equations</b>	<ul style="list-style-type: none"> <li>• Solving an equation means getting the variable alone on one side of the equation to find its value.</li> <li>• To get the variable alone, you use inverse operations to undo what has been done to the variable.</li> <li>• Addition and subtraction are inverse operations.</li> <li>• Multiplication and division are inverse operations.</li> <li>• Whatever you do to one side of the equation, you must also do to the other side to maintain the equality.</li> </ul>
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## EXAMPLES

**A** Solve  $x + 5.7 = 2.5$ .

$$x + 5.7 = 2.5$$

$$x + 5.7 - 5.7 = 2.5 - 5.7 \quad \text{Subtract 5.7 from each side.}$$

$$x = -3.2$$

**B** Solve  $y - \frac{1}{4} = \frac{2}{3}$ .

$$y - \frac{1}{4} = \frac{2}{3}$$

$$y - \frac{1}{4} + \frac{1}{4} = \frac{2}{3} + \frac{1}{4} \quad \text{Add } \frac{1}{4} \text{ to each side.}$$

$$y = \frac{8}{12} + \frac{3}{12} \text{ or } \frac{11}{12} \quad \text{The LCD is 12. Rename the fractions.}$$

## Try These Together

1. Solve  $2.7 + n = 5.8$ .

*HINT: Subtract 2.7 from each side.*

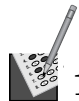
2. Solve  $\frac{3}{5} = a - \frac{1}{8}$ .

*HINT: Add  $\frac{1}{8}$  to each side.*

## PRACTICE

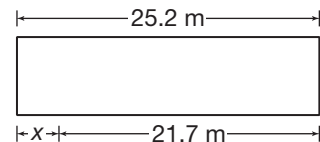
Solve each equation. Check your solution.

- |   |                                       |   |
|---|---------------------------------------|---|
| 3. $p - 3.7 = -2.4$                               | 4. $y + 5.7 = 9.43$                   | 5. $t - 4.7 = -3.1$                     |
| 6. $8.39 + d = 6.12$                              | 7. $b - (-60.25) = 121.6$             | 8. $-8.8 + q = 14.3$                    |
| 9. $w + \frac{1}{2} = \frac{7}{8}$                | 10. $z - \frac{2}{5} = \frac{7}{20}$  | 11. $\frac{1}{2} + m = \frac{7}{12}$    |
| 12. $j - \left(-\frac{1}{9}\right) = \frac{1}{6}$ | 13. $y - 1\frac{2}{5} = 2\frac{4}{5}$ | 14. $e + 3\frac{1}{10} = -7\frac{1}{5}$ |



**15. Standardized Test Practice** Solve for the measure of  $x$ .

- A** 4.5 m                      **B** 4.4 m  
**C** 3.5 m                      **D** 3.4 m



Answers: 1. 3.1   2. $\frac{29}{20}$ 3. 1.3   4. 3.73   5. 1.6   6. -2.27   7. 61.35   8. 23.1   9. $\frac{8}{3}$ 10. $\frac{4}{3}$ 11. $\frac{12}{1}$ 12. $\frac{18}{1}$ 13. $4\frac{1}{4}$ 14. $-10\frac{10}{3}$ 15. C
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