

Solving a Linear Equation with Several Occurrences of the Variable: Problem Type 4

• Example 1

Solve for x .

$$6 - \frac{1}{2}x = \frac{3}{5} + x$$

We need to isolate the variable x . We first add $\frac{1}{2}x$ to both sides and subtract $\frac{3}{5}$ from both sides.

$$6 - \frac{3}{5} = x + \frac{1}{2}x$$

$$\frac{27}{5} = \frac{3}{2}x$$

$$\frac{2}{3} \cdot \frac{27}{5} = \frac{2}{3} \cdot \frac{3}{2}x$$

$$\frac{18}{5} = x$$

• • • CHECK YOURSELF 1

Solve for x .

$$\frac{3}{2}x - 3 = 4 - x$$

• • • CHECK YOURSELF ANSWER

1. $\frac{14}{5}$.

2.12 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Solve for x and check your result.

1. $\frac{8}{3}x - 3 = \frac{2}{3}x + 15$

2. $\frac{12}{5}x + 7 = 31 - \frac{3}{5}x$

3. $\frac{2}{5}x - 5 = \frac{12}{5}x + 8$

4. $\frac{3}{7}x - 5 = \frac{24}{7}x + 7$

5. $\frac{10}{3}x - 5 = \frac{4}{3}x + 7$

6. $\frac{11}{4}x - 15 = 5 - \frac{5}{4}x$

7. $\frac{4}{3}x - 6 = 4 - \frac{2}{3}x$

8. $\frac{6}{7}x + 14 = 16 - \frac{15}{7}x$

9. $\frac{29}{3}x - 13 = 29 + \frac{11}{3}x$

10. $\frac{58}{11}x - 67 = \frac{14}{11}x - 23$