

2.11

Solving a Linear Equation with Several Occurrences of the Variable: Problem Type 3

• Example 1

Solve.

$$\frac{0.1x}{0.2} + \frac{3.1x - 0.5}{0.4} = 5$$

We begin by multiplying both the numerator and the denominator of each fraction by 10. This gives:

$$\frac{x}{2} + \frac{31x - 5}{4} = 5$$

Next we multiply both sides of the equation by the least common multiple of the denominators, which is 4.

$$4 \cdot \frac{x}{2} + 4 \cdot \frac{31x - 5}{4} = 5 \cdot 4$$

$$2x + 31x - 5 = 20$$

$$33x = 25$$

$$x = \frac{25}{33}$$

• • • CHECK YOURSELF 1

Solve and check.

$$\frac{0.9x + 1.2}{0.7} - \frac{x}{0.3} = -1$$

• • • CHECK YOURSELF ANSWER

1. $\frac{57}{43}$.

2.11 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

Solve for x and check your result.

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

$$1. \frac{x}{0.5} - \frac{2.5x - 1.7}{0.2} = 12$$

$$2. \frac{1.7x - 0.1}{0.3} + \frac{0.8x + 0.2}{0.4} = 3$$

$$3. \frac{1.9x}{0.4} - \frac{8.1x}{0.2} = 2$$

$$4. \frac{5.1x + 1.7}{1.2} - \frac{2.8x + 0.7}{1.2} = \frac{1.1}{0.6}$$

$$5. \frac{0.7x + 0.2}{0.3} - \frac{0.2x - 0.5}{0.2} = 3$$

$$6. \frac{1.2x - 1.5}{0.5} + \frac{1.6x + 1.9}{0.4} = 0.6$$

$$7. \frac{1.3x + 0.8}{0.2} - \frac{1.6x + 0.9}{1.1} = 5$$

$$8. \frac{1.3x}{0.6} - \frac{1.2x - 1.6}{0.5} = 6$$

$$9. \frac{1.3x + 4.6}{0.3} + \frac{2.1 - 2.2x}{0.7} = 10$$

$$10. \frac{1.1x + 2.9}{1.7} + \frac{0.6x - 1}{1.2} = 1$$