5.19 Solving a Simple Equation with Rational Expressions: Problem Type 2

• Example 1

Solve.

$$\frac{7}{4x} - \frac{3}{x^2} = \frac{1}{2x^2}$$

The LCD of $4x$, x^2, and $2x^2$ is $4x^2$. So, multiplying both sides by $4x^2$, we have

$$4x^2\left(\frac{7}{4x} - \frac{3}{x^2}\right) = 4x^2 \cdot \frac{1}{2x^2}$$ Distribute $4x^2$ on the left side.

$$4x^2 \cdot \frac{7}{4x} - 4x^2 \cdot \frac{3}{x^2} = 4x^2 \cdot \frac{1}{2x^2}$$ Simplify.

$$7x - 12 = 2$$

$$7x = 14$$

$$x = 2$$

We leave the check of the solution, $x = 2$, to you. Be sure to return to the original equation and substitute 2 for x.

CHECK YOURSELF 1

Solve.

$$\frac{5}{2x} - \frac{4}{x^2} = \frac{7}{2x^2}$$

CHECK YOURSELF ANSWER

1. 3.

5.19 Exercises

Name

Section Date

ANSWERS

1.

2.

3.

4.

5.

6.

Solve for x.

1. $\frac{x}{3} + \frac{3}{2} = \frac{x}{6} + \frac{7}{3}$

2. $\frac{x}{10} - \frac{1}{5} = \frac{x}{5} + \frac{1}{2}$

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

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

5. $\frac{5}{4x} - \frac{1}{2} = \frac{1}{2x}$

6. $\frac{7}{6x} - \frac{1}{3} = \frac{1}{2x}$