Lesson 26: Solving Rational Equations

Classwork

Exercises 1–2

Solve the following equations for x, and give evidence that your solutions are correct.

1. $\dfrac{x}{2} + \dfrac{1}{3} = \dfrac{5}{6}$
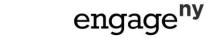
2. $\dfrac{2x}{9} + \dfrac{5}{9} = \dfrac{8}{9}$

Example

Solve the following equation: $\dfrac{x+3}{12} = \dfrac{5}{6}$.

Exercises 3–7

3. Solve the following equation: $\dfrac{3}{x} = \dfrac{8}{x-2}$.

4. Solve the following equation for a: $\dfrac{1}{a+2} + \dfrac{1}{a-2} = \dfrac{4}{a^2-4}$.

5. Solve the following equation. Remember to check for extraneous solutions.

$$\frac{4}{3x} + \frac{5}{4} = \frac{3}{x}$$

6. Solve the following equation. Remember to check for extraneous solutions.

$$\frac{7}{b+3} + \frac{5}{b-3} = \frac{10b-2}{b^2-9}$$

7. Solve the following equation. Remember to check for extraneous solutions.

$$\frac{1}{x-6} + \frac{x}{x-2} = \frac{4}{x^2-8x+12}$$