

Rational Operations Review**Simplify each and state the excluded values.**

1.

$$\frac{5m^2 + 41m - 90}{7m^2 + 62m - 80}$$

2.

$$\frac{2v^2}{3} \cdot \frac{v^2 - 9v + 18}{2v^3 - 12v^2}$$

3.

$$\frac{\frac{3x - 1}{x + 3}}{\frac{x + 3}{x - 4}}$$

4.

$$\frac{2b}{4b^3 + 16b^2} + \frac{4}{b - 4}$$

5.

$$\frac{\frac{9}{x + 1} + \frac{x + 1}{9}}{\frac{x + 1}{3}}$$

6.

$$\frac{5}{n - 3} - \frac{3}{n - 2}$$

Solve the following rational equations. Remember to check your answers.

7.

$$\frac{x - 4}{x - 2} = \frac{x - 2}{x + 2} + \frac{1}{x - 2}$$

8.

Carl decides to explore Provo River. He canoes downstream 5 miles to check out Bridal Veil Falls. Finding that it was dried up, he immediately turns around, retraces his route (this time traveling upstream against the current). He returns to his beginning point 3 hours after he left. If Carl canoes at a rate of 6 miles per hour in still water, how fast was the Provo River flowing on that day?