

## Unit 5 Rational Expressions Review

Perform the indicated operation. Express your answer in simplest form.

1.  $\frac{11}{6x} + \frac{x+1}{4x^2}$

2.  $\frac{1}{x} - \frac{3}{x-4}$

3.  $\frac{2}{5x-10} - \frac{3x}{x^2-4}$

4.  $\frac{8}{x+6} + \frac{7x+10}{x^2+8x+12}$

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

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

7.  $\frac{m^2-64}{3m-24} \div \frac{m^3+2m^2-48m}{6m}$

8.  $\frac{d^2-1}{d-1} \cdot \frac{18}{d+1}$

9.  $\frac{10k-30}{25} \cdot \frac{5k}{k^2-k-6}$

10.  $\frac{b+4}{4} \div \frac{b+4}{b-1}$

11.  $\frac{x-4}{3x+6} \div \frac{x}{x+2}$

12.  $\frac{x-5}{3x+9} \div \frac{x}{x+3}$

Solve the Rational Equations. Make sure to check for extraneous solutions.

$$13. \frac{18}{x-2} = 6$$

$$14. \frac{2}{x+1} + \frac{x}{x-1} = \frac{2}{x^2-1}$$

$$15. \frac{3}{x-2} = \frac{6}{x+1}$$

$$16. \frac{6}{x^2-2x-15} = \frac{x}{x+3} + \frac{3}{x-5}$$

$$17. \frac{6}{x+2} + \frac{x}{x-3} = \frac{-25}{x^2-x-6}$$

$$18. \frac{x}{x^2+x-2} - \frac{2}{x-1} = \frac{3}{x+2}$$

Solve the Radical Equation.

$$19. -3\sqrt{x-4} = -42$$

$$20. \sqrt{x-2} - 3 = 7$$

$$21. -2 + \sqrt{x-4} = 6$$

$$22. x - 4 = \sqrt{2x}$$

$$23. \frac{3\sqrt{x-7}}{2} - 2 = 7$$

$$24. 2\sqrt{x-7} - 3 = 3$$