

## Chapter 11 Test Review

Name: \_\_\_\_\_

### Section 11.1: Proportions

Solve the proportions using cross multiplication.

$$1.) \frac{x}{4} = \frac{7}{2}$$

$$2.) \frac{5x}{10} = \frac{4}{2}$$

$$3.) \frac{7}{10} = \frac{9+x}{x}$$

$$4.) \frac{x}{-3} = \frac{7}{x-10}$$

### Section 11.3: Simplifying Rational Expressions

Simplify the expression if possible.

$$5.) \frac{8x}{40}$$

$$6.) \frac{16x^6}{4x^4}$$

$$7.) \frac{2x^2 + x}{4x}$$

$$8.) \frac{x+7}{7}$$

9.)  $\frac{x^2 - x - 6}{x^2 - 4}$

10.)  $\frac{x^2 + 9x + 14}{x^2 - 49}$

**Section 11.4: Multiplying and Dividing Rational Expressions****Multiply or divide. Simplify the expression.**

11.)  $\frac{16x}{2} \cdot \frac{3}{4x}$

12.)  $\frac{3x + 6}{2x} \cdot \frac{10x^2}{x^2 - 4}$

13.)  $\frac{x^2}{x - 1} \div \frac{x}{x^2 + x - 2}$

14.)  $\frac{36}{x + 5} \div \frac{12}{x^2 - 25}$

**Section 11.5: Adding and Subtracting with Like Denominators****Add or subtract. Simplify the expression.**

15.)  $\frac{9}{2x} - \frac{5}{2x}$

16.)  $\frac{x^2 - 2}{x^2 - 25} + \frac{4x - 3}{x^2 - 25}$

$$17.) \frac{x+7}{x+5} + \frac{4x+3}{x+5}$$

$$18.) \frac{2x+4}{5x+4} - \frac{x+1}{5x+4}$$

**Section 11.6: Adding and Subtracting with Unlike Denominators**

**Add or subtract. Simplify the expression.**

$$19.) \frac{2}{2x} - \frac{x-1}{3x^2}$$

$$20.) \frac{2x+3}{4} + \frac{x+1}{2}$$

$$21.) \frac{2x}{3} - \frac{x+1}{5}$$

$$22.) \frac{4}{x} + \frac{x-5}{x^2}$$