136 Simplify, Multiply & Divide Rational Expressions

$$\frac{2x+2}{x^2+4x+3} = \frac{2(x+1)}{(x+3)(x+1)} = \frac{2}{x+3}$$

$$\frac{x+4}{x^2-16} = \frac{x+4}{(x+4)(x-4)} = \frac{1}{x-4}$$

$$\frac{x^2-2x-3}{x^2-x-6} = \frac{(x-3)(x+1)}{(x-3)(x+2)} = \frac{x+1}{x+2}$$

$$\frac{2x^2+4x}{x^2-4x-12} \cdot \frac{x^2-9x+18}{2x} = \frac{2x(x+2)}{(x-6)(x+2)} \cdot \frac{(x-6)(x-3)}{2x}$$

$$= x-3$$

$$\frac{3}{x+7} \div \frac{8x^2-8x}{x^2+6x-7}$$

$$\frac{3}{x+7} \cdot \frac{x^2+6x-7}{8x^2-8x} = \frac{3}{x+7} \cdot \frac{(x+7)(x-1)}{8x(x-1)}$$

$$= \frac{3}{8x}$$

Algebra 2 Name_____

Simplify, Multiply, and Divide Rational Expressions Date_____ Period____

Simplify each and state the excluded values.

1) $\frac{63x^3}{21x^2} = 3x$

11) $\frac{v-6}{10v-60} = \frac{v-6}{10(v-6)} = \frac{1}{10}$

21) $\frac{x^2-16x+63}{x^2-15x+54} = \frac{(x-9)(x-7)}{(x-9)(x-6)} = \frac{x-7}{x-6}$

19.) $\frac{14m}{14m+10} = \frac{14m}{2(7m+5)} = \frac{7m}{7m+5}$