Math 3

Warm-Up

____ 5. Which polynomial function has zeros of –4, –1, and 3?

____ 6. What is the remainder when $(x^3 + 6x^2 + 6x - 14)$ is divided by $(x + 2)$?

A Rational Expression is an expression that can be written as a ratio of two polynomials.

An excluded value is a number that makes a rational expression undefined.

A rational expression is in simplest form when the numerator and denominator have no factors in common other than 1.

Excluded Values

Find the excluded values, if any, of the expression.

1. $\frac{x+2}{6x}$

2. $\frac{7}{3x+12}$

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

4. $\frac{6x-7}{x^2-3x-10}$

Dividing out a monomial

Simplify the rational expression, if possible. State the excluded values.

5 $\frac{x}{3x}$

6 $\frac{2x}{2(x-3)}$

7 $\frac{5x^3 + 10x^2}{20x^2}$

8 $\frac{3x}{x+7}$

Dividing out a binomial

Simplify the rational expression, if possible. State the excluded values.

9 $\frac{x^2 + 2x - 3}{x^2 + 8x + 15}$

10 $\frac{x^2 + 2x - 8}{x^2 - 4}$

Recognizing Opposites

Simplify the rational expression, if possible. State the excluded values.

11 $\dfrac{3x - 9}{12x - 4x^2}$

12 $\dfrac{x^2 - x - 12}{16 - x^2}$