Lesson 11: Rational Functions

Classwork

Opening Exercise

Factor each expression completely:

**Example 1**

Reduce the expression to lowest terms and identify the value(s) of that must be excluded to avoid division by zero.

Exercise 1

1. Reduce each rational expression to lowest terms, specifying the values of that must be excluded to avoid division by zero.

**Example 2**

Let . Reduce the rational expression to lowest terms and use the reduced form to express the rule of . Be sure to indicate any restrictions on the domain.

Exercise 2

1. Determine the domain of each rational function and express the rule for each function in an equivalent form in lowest terms.

Problem Set

1. For each pair of functions and , find the domain of and the domain of . Indicate whether and are the same function.
2. Determine the domain of each rational function and express the rule for each function in an equivalent form in lowest terms.
3. For each pair of functions below, calculate and . Indicate restrictions on the domain of the resulting functions.