

## Antidifferentiating Rational Functions

Keep in mind that when the degree of the numerator is greater than or equal to the degree of the denominator, the first step is to divide the numerator by the denominator. Remember, there is no Quotient Rule for antidifferentiation. Numbers 1 and 2 below would have been fair test questions in Calculus I.

$$1. \int \frac{1}{x^2 + 1} dx$$

$$2. \int \frac{x}{x^2 + 1} dx$$

$$3. \int \frac{x^2}{x^2 + 1} dx$$

$$4. \int \frac{2x - 3}{x^2 + 1} dx$$

$$5. \int \frac{2x - 3}{x + 1} dx$$