

## Reading Questions 11

### Section 7.4 : Example 5

1. Long division was used to compute the integral.
2.  $\frac{x(x+2)+2x}{x+2} = x + \frac{2x}{x+2}$
3. What is  $\int \frac{1}{(1-2x)} dx$ ?

## Section 7.4 Algebraic Identities and Trigonometric Substitutions (Part 2)

### Long division

**P 1.** Compute  $\int \frac{3}{(x^2+1)(x+2)} dx$ .

**P 2.** Consider the integral  $\int \frac{x^4+3x^3+2x^2+1}{x^2+3x+2} dx$ . What is an indication that long division might be of use to solve this integral? Use long division to compute the integral.

### Trigonometric Substitutions

**P 3.** Use trig substitution to find  $\int \frac{1}{\sqrt{9-x^2}} dx$ .

**P 4.** Find  $\int \sqrt{16-x^2} dx$ .

**P 5.** Find  $\int \frac{1}{x^2+1} dx$  by using trig substitution.