

## Problem Set 12

### 7.4: Integration of Rational Functions By Partial Fractions

*Please indicate the members who are present. Also indicate the group coordinator.*

Group Number:	
Members:	

**Problem 1**

Write the form of the partial fraction decomposition of

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

**Problem 2**

Find the integral  $\int \frac{3x^3 + 4x^2 + 2}{x^4 + x^2} dx$ .

**Problem 3**

Find the integral  $\int \frac{2x^3 + 13}{x^3 - x^2 + 4x - 4} dx$ .

**Problem 4**

Find the integral  $\int \frac{\cos x}{(2 - \cos^2 x) \sin x} dx$ .

**Problem 5**

Find the integral  $\int \frac{1}{\cos x + \sin x} dx$ .







