Section 7.4: Additional Problems

1. Write out the partial fraction decomposition. Do not determine the numerical values of the coefficients.

$$\frac{x^2 - 4x + 4}{(x^2 + 2x)(x^2 - 25)^2(x^2 + 9)}$$

2. Write out the partial fraction decomposition. Do not determine the numerical values of the coefficients.

$$\frac{x^4 + 2x^3 + 7}{x^4 + 2x^2 + 1}$$

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

4. $\displaystyle\int \frac{x^3 + 7x^2 + 2x + 8}{x^3 + 4x^2}\, dx$

5. $\displaystyle\int \frac{2x + 1}{(x + 3)(x^2 + 1)^2}\, dx$