

1. (2 pts) Write the general form of the partial fraction decomposition for $\frac{2x+5}{(x^3+x^2)(x^2+1)^2}$. You **do not** have to determine the constants involved.

2. (8 pts) Use partial fractions to compute the integrals

(a) $\int \frac{x^3}{x^2 - 4} dx$

(b) $\int \frac{1}{x^3 + 4x} dx$

Note: Each integral can be also done with an appropriate trig substitution. You will receive one additional point (for each) if you compute them both ways.