

1. Write the first couple steps for these integrals: *DO NOT SOLVE ALL THE WAY!*

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

(b)  $\int \frac{x + 7}{x^2 + 6x + 13} dx.$

(c)  $\int \cos \sqrt{x + \pi^2} dx.$

(d)  $\int \tan^5 \theta \sec \theta d\theta.$

(e)  $\int \sin^5 \theta \cos^3 \theta d\theta.$

(f)  $\int \frac{x}{(x^2 + 2x - 3)^{3/2}} dx.$

(g)  $\int_0^{\infty} x^3 e^{-x^2} dx.$

(h)  $\int \frac{x^3 + 2}{x^2 - 1} dx.$

(i)  $\int \frac{\sin x \cos x}{\sin^4 x + \cos^4 x} dx$