

Name: SOLUTIONS

Quiz #9, November 19, 2007

1. Find the most general antiderivative of the function $f(x) = e^x + \sin x$.

$$F(x) = e^x - \cos x + C$$

2. Suppose $f''(t) = t + e^t$. If $f'(0) = 1$ and $f(0) = 2$, find $f(t)$.

$$f'(t) = t^2/2 + e^t + C$$

but $f'(0) = 1 = 1 + C$ so $C = 0$.

Now $f(t) = t^3/6 + e^t + D$ and $2 = 0 + 1 + C$ so $C = 1$.

$$f(t) = t^3/6 + e^t + 1.$$