

Name:

1. (3pts) Evaluate the integral $\int \frac{\sin x}{-\cos x + \sin x + 1} dx$.

2. (3pts) Evaluate the integral: $\int \frac{3 dx}{x^2 - x - 2}$.

3. (4pts) Let $F(x)$ be defined by $F(x) = \int_0^x \tan^{-1} t dt$. If we apply the midpoint rule to approximate the integral $\int_{-1/2}^{1/2} F(x) dx$, how many subintervals do we need in order for the error to be at most $1/2400$?