

To receive credit you **MUST SHOW ALL YOUR WORK.**

1. (3 pts) Solve the initial value problem:

$$\frac{dy}{dx} = 5e^x - 3\sqrt{x}, \quad y(0) = 0$$

2. (9 pts) Evaluate each integral:

(a) $\int \left(\frac{1}{3x} - \frac{2}{\sqrt{1-x^2}} + \pi^2 \right) dx$

(b) $\int \frac{\sec^2(2/x)}{x^2} dx$

(c) $\int (1+3 \cos x)^5 \sin x dx$