

MT 1810 Calculus II

Find the following antiderivatives.

a. $\int \left(\sqrt{t} + \frac{1}{\sqrt{t}} \right) dt =$

b. $\int \left(2 - \frac{1}{x} + e^{3x} \right) dx =$

c. $\int 5 \sin(-2t) dt =$

Solve the following initial value problems (IVPs).

d. $\frac{dy}{dx} = 6x - \frac{1}{x}, \quad y(1) = 0.$

e. $\frac{dy}{dx} = 5e^x + 2, \quad y(0) = 1.$