Solutions for Self-exam

Only final answers are provided. If you don’t know how to get the final answer, please ask me or Luis during office hours.

1. \( \frac{d(e^{3t})}{dt} = 3e^{3t} \)

2. \( \frac{d(\ln t)}{dt} = \frac{1}{t} \)

3. \( \frac{d(\sin t)}{dt} = \cos t \)

4. \( \int_0^1 t^2 \, dt = \frac{1}{3} \)

5. \( \int_0^t s \, ds = \frac{1}{2} t^2 \)

6. \( \frac{\partial f}{\partial x} = 2x + ye^x, \frac{\partial f}{\partial y} = e^x \)

7. \( \frac{d^4f(t)}{dt^4} = 0 \)