MATH 20C: FUNDAMENTALS OF CALCULUS II
QUIZ #1

Problem 1. Evaluate the integral
$$\int (x^{-0.2} - x^2)\, dx.$$

Solution. We have
$$\int (x^{-0.2} - x^2)\, dx = \int x^{-0.2}\, dx - \int x^2\, dx = \frac{x^{0.8}}{0.8} - \frac{x^3}{3} + C = 1.25 x^{0.8} - \frac{x^3}{3} + C.$$

Problem 2. Evaluate the integral
$$\int \left(\frac{e^x}{3} + \frac{2}{x} - 3 \right) dx.$$

Solution. We have
$$\int \left(\frac{e^x}{3} + \frac{2}{x} - 3 \right) dx = \frac{1}{3} \int e^x\, dx + 2 \int x^{-1}\, dx - 3 \int 1\, dx = \frac{e^x}{3} + 2 \ln|x| - 3x + C.$$