

MAC 2312 Calculus—Analytic Geometry II

Quiz #1: Techniques of Integration

**Problem 1** Evaluate the following integrals:

1.  $\int (\ln x)^2 dx$

2.  $\int \sin^3 x \cdot \cos^2 x dx$

3.  $\int x \cdot 5^x dx$

**Problem 2** Prove that

$$\int f(x) dx = x \cdot f(x) - \int x \cdot f'(x) dx \quad .$$