

Evaluate the following integrals using integration by parts, and *check your answers!!*

1.  $\int xe^x dx$

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

3.  $\int_0^1 x \sin(\pi x) dx$

4.  $\int x^2 \cos(2x) dx$

5.  $\int x \sec^2(4x) dx$

6.  $\int \ln(x) dx$