

Section 8.2

Integration by Parts: If u and v are functions of x and have continuous derivatives, then

$$\int u \, dv = uv - \int v \, du$$

1) Find the following:

a) $\int x \cos x \, dx.$

b) $\int_1^2 x \ln x \, dx$

2) Find $\int \arctan x \, dx.$

3) Find the following:

a) $\int x^2 e^x dx$

b) $\int e^x \sin x dx$

4) Find $\int x^5 e^{x^3} dx$. Hint: choose dv so that you can find v using substitution.

5) Find $\int x^3 e^{3x} dx$ using the tabular method.