

some basic integration-by-parts problems

1.

$$\int x^2 \ln x \, dx$$

2.

$$\int \ln x \, dx$$

3.

$$\int \tan^{-1} x \, dx$$

4.

$$\int x e^x dx$$

5.

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

6.

$$\int 2x \sec^{-1} x dx$$