

Use integration by parts to evaluate all these problems.

1.  $\int (x^2 + 2x - 1)e^{3x} dx$

2.  $\int_0^\pi (x^2 - \pi x) \sin x dx$

3.  $\int_0^2 \ln x dy$

4.  $\int_0^1 x \tan^{-1} x dx$

5.  $\int \csc^3 4x \, dx$

6.  $\int e^{2x} \cos 3x \, dx$

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

8.  $\int x e^{-x} \, dx$