Calculus II, MAT102,

Sheet 1 (INTEGRATION BY PARTS)

Name	
Student Number	
Year	
Mark	/10
Hand in by	

(Exercises)

Problems: 1, 2, 5, 6, 7, 18, 21, 22, 25, 27. Page 431

Please attach your working, with this sheet at the front.

1. Evaluate the following integrals using integration by parts

(i) $\int x \cos x \, dx$

(ii) $\int x \sin 4x \, dx$

(iii) $\int x^2 \ln x \, dx$

(iv) $\int \frac{\ln x}{x} \, dx$

(v) $\int x^2 e^{-3x} \, dx$

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

(vii) $\int x \sin x^2 \, dx$

(viii) $\int x^2 \sin x \, dx$

(ix) $\int_0^1 x^2 \cos \pi x \, dx$

(x) $\int_0^1 x^2 e^{3x} \, dx$

(xi) $\int x^2 e^{ax} \, dx, \ a \neq 0$

(xii) $\displaystyle\int x^n \ln x \, dx, \; n \neq -1$