Calculus Option (Q 8, Paper 2)

Lesson No. 1: Integration by Parts

2005

8 (a) Use integration by parts to find $\int x^2 \ln x \, dx$.

2004

8 (a) Use integration by parts to find $\int x \sin x \, dx$.

2003

8 (a) Use integration by parts to find $\int xe^{-5x} dx$.

2002

8 (a) Use integration by parts to find $\int x \ln x \, dx$.

2001

8 (a) Use integration by parts to find $\int x \cos x \, dx$.

Answers

2005 8 (a) $\frac{1}{3}x^3 \ln x - \frac{1}{9}x^3 + c$

2004 8 (a) $-x \cos x + \sin x + c$

2003 8 (a) $-\frac{1}{5}xe^{-5x} - \frac{1}{25}e^{-5x} + c$

2002 8 (a) $\frac{1}{2}x^2 \ln x - \frac{1}{4}x^2 + c$

2001 8 (a) $x \sin x + \cos x + c$