

PRINT Your Name: _____

Quiz – February 19, 2004

Find

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

Answer: Use integration by parts. Let $u = x$ and $dv = \cos x \, dx$. It follows that $du = dx$ and $v = \sin x$. The original integral is

$$\int u \, dv = uv - \int v \, du = x \sin x - \int \sin x \, dx = \boxed{x \sin x + \cos x + C}.$$

Check: The derivative of the proposed answer is

$$x \cos x + \sin x - \sin x. \checkmark$$