integrate $\int 2x\cos x dx$

make $u = 2x$ and $\frac{dv}{dx} = \cos x$

$dv = \cos x dx$

then $\frac{du}{dx} = 2$ and $v = \sin x$

$du = 2dx$

using the formula

$$\int u dv = uv - \int v du$$

$$\int 2x\cos x dx = 2x.\sin x - \int \sin x.2dx$$

$$= 2x\sin x - 2(-\cos x) + C$$

$$= 2x\sin x + 2\cos x + C$$