Question #50926– Math – Integral Calculus

$$\int x \cos ax^2 \, dx$$

Solution:

Let $x^2 = t$, then $2xdx = dt$
Hence:

$$\int x \cos ax^2 \, dx = \frac{1}{2}\int \cos ax^2 \cdot 2xdx = \frac{1}{2}\int \cos at \, dt =$$

$$= \frac{1}{2a}\sin at + C = \frac{1}{2a}\sin ax^2 + C$$

Answer:

$$\boldsymbol{D}\text{: } \boldsymbol{\frac{1}{2a}\sin ax^2 + C}$$