

QUESTION

Evaluate $\int_0^{\frac{\pi}{2}} \sin(2x) dx$.

ANSWER

$$\int_0^{\frac{\pi}{2}} \sin(2x) dx = \left[-\frac{\cos(2x)}{2} \right]_0^{\frac{\pi}{2}} = -\frac{1}{2} \{ \cos \pi - \cos 0 \} = -\frac{1}{2} (-1 - 1) = 1$$