

Date \_\_\_\_\_

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$$\begin{aligned} 1. \int \cos^2(qx) dx &= \frac{1}{2} \frac{\sin(qx) \cdot \cos(qx)}{q} + \frac{x}{2} + C \\ &= \frac{\sin(qx) \cdot \cos(qx)}{2q} \end{aligned}$$

$$\begin{aligned} 2. \int_0^{\pi/2} x \cdot \cos x dx &= x \sin(x) + \cos(x) \Big|_0^{\pi/2} \\ &= \frac{\pi}{2} \cdot \sin(\pi/2) - \cos(0) \\ &= \frac{\pi}{2} - 1 \end{aligned}$$

$$3. \int 2 + 6 \cos^2(x) dx = 5x + 3 \sin(x) \cos(x) + C$$