Using Substitution

$$\int \cos(7\theta + 5)\, d\theta = \int \cos u \cdot \frac{1}{7}\, du$$

Let $u = 7\theta + 5$, $du = 7\, d\theta$, $(1/7)\, du = d\theta$.

$$= \frac{1}{7}\int \cos u\, du$$

With the $(1/7)$ out front, the integral is now in standard form.

$$= \frac{1}{7}\sin u + C$$

Integrate with respect to u, Table 4.2.

$$= \frac{1}{7}\sin(7\theta + 5) + C$$

Replace u by $7\theta + 5$.