extra example!

Note: $\int \sin(kx)\,dx$ (k constant)

$= \int \sin(u)\,\frac{1}{k}\,du$, { let $u = kx \Rightarrow \frac{du}{dx} = k$, $dx = \frac{du}{k}$

$= \frac{1}{k}\int \sin(u)\,du = -\frac{1}{k}\cos(u) + C = -\frac{1}{k}\cos(kx) + C$

In general $\int f(kx)\,dx = \int f(u)\,\frac{1}{k}\,du = \frac{1}{k}\int f(u)\,du$

$= \frac{1}{k}F(u) + C$

$= \frac{1}{k}F(kx) + C$, where $F'(x) = f(x)$

eg. $\int e^{7x}\,dx = \frac{1}{7}e^{7x} + C$

eg. $\int \sec^2(47x)\,dx = \frac{1}{47}\tan(47x) + C$