

25.  $u = x, dv = \sec^2 x dx, du = dx, v = \tan x;$

$$\int x \sec^2 x dx = x \tan x - \int \tan x dx = x \tan x - \int \frac{\sin x}{\cos x} dx = x \tan x + \ln |\cos x| + C$$

26.  $u = x, dv = \tan^2 x dx = (\sec^2 x - 1)dx, du = dx, v = \tan x - x;$

$$\begin{aligned} \int x \tan^2 x dx &= x \tan x - x^2 - \int (\tan x - x) dx \\ &= x \tan x - x^2 + \ln |\cos x| + \frac{1}{2}x^2 + C = x \tan x - \frac{1}{2}x^2 + \ln |\cos x| + C \end{aligned}$$

27.  $u = x^2, dv = xe^{x^2} dx, du = 2x dx, v = \frac{1}{2}e^{x^2};$

$$\int x^3 e^{x^2} dx = \frac{1}{2}x^2 e^{x^2} - \int xe^{x^2} dx = \frac{1}{2}x^2 e^{x^2} - \frac{1}{2}e^{x^2} + C$$