$$I = \int f(g(x))\, g'(x)\, dx = \int f(u)\, du \qquad u = g(x)$$

Oef 1 (48)

$$\int \frac{dy}{\cos^2(by)\,(a + c\,\mathrm{tg}(by))}$$

$u = a + c\,\mathrm{tg}(by)$

$\Rightarrow du = c \cdot \frac{1}{\cos^2(by)} \cdot b\, dy$

$\Rightarrow \frac{dy}{\cos^2(by)} = \frac{du}{bc}$

$$= \int \frac{du}{bc\,u} = \frac{1}{bc} \ln|u| + C$$

$$= \frac{1}{bc} \ln|a + c\,\mathrm{tg}(by)| + C$$

Oef 1 (56)

$$\int \frac{y}{\sqrt{4y+2}}\, dy$$

Stel $\sqrt{4y+2} = u$

$\Rightarrow 4y + 2 = u^2 \Rightarrow y = \frac{u^2 - 2}{4}$

$dy = \frac{1}{4} 2u\, du = \frac{u\, du}{2}$

$$= \frac{1}{4} \int \frac{u^2 - 2}{u} \frac{u\, du}{2}$$

$$= \frac{1}{8} \left[\int u^2 du - 2 \int du \right]$$

$$= \frac{1}{8} \left(\frac{u^3}{3} - 2u \right) + C$$

$$= \frac{1}{8} \left(\frac{(\sqrt{4y+2})^3}{3} - 2\sqrt{4y+2} \right) + C$$

$= \dots$