

bad 1

$$c) \int \frac{e^{2x}}{e^{2x} + 2} dx =$$

$$= \int \frac{e^t}{e^t + 2} \frac{dt}{2} = \frac{1}{2} \int \left(\frac{e^t}{e^t + 2} \right) dt$$

$$= \frac{1}{2} \ln(e^t + 2) =$$

$$= \frac{1}{2} \ln(e^{2x} + 2)$$

$$t = e^{2x} \quad dt = 2 dx$$

$$dx = \frac{dt}{2}$$

$$(e^t + 2)' = e^t$$

$$\int \frac{f'(x)}{f(x)} = \ln(f(x)) + C$$

$$t = e^{2x} \quad dt = 2 dx$$

$$d) \int \frac{x^2}{\cos x^3} dx$$

$$u = x^3 \quad du = 3x^2 dx$$

$$dx = \frac{du}{3x^2} = \frac{du}{3u^{2/3}}$$

$$\frac{u^2}{\cos u} \cdot \frac{du}{3u^{2/3}} = \frac{1}{3} \int \frac{u^{4/3}}{\cos u} du$$

$$\int \frac{u^2}{\cos u} du$$

$$\frac{1}{3} \int \frac{u^{4/3}}{\cos u} du$$