

$$a) \int \frac{1}{\cos^2 x} dx =$$

$$\frac{1}{\cos x} \cdot \frac{1}{\cos x}$$

$$\frac{1}{\sec x} \cdot \frac{1}{\sec x}$$

$$\frac{1}{\sec^2 x}$$

$$\tan x + c$$

$$b) \int \frac{\cos x}{\sin x} dx =$$

$$\cot x$$

$$\ln|\sin x| + c$$

$$c) \int \frac{1}{\cos^2 x \cdot \csc x} dx =$$

$$\frac{1}{\cos x} \cdot \frac{1}{\cos x} \cdot \frac{1}{\csc x}$$

$$\frac{1}{\cos x} \cdot \frac{1}{\cos x} \cdot \sin x$$

$$\sec x \cdot \frac{\sin x}{\cos x}$$

$$\sec x \cdot \tan x$$

$$\sec x + C$$

$$d) \int (5 \cos x + 3 \sec^2 x) dx =$$

$$5 \cdot \sin x + 3 \cdot \tan x + C$$

$$e) \int (5e^x + \frac{1}{2x} - \sin x) dx =$$

$$5e^x + \frac{1}{2}x - \cos x$$

$$5e^x + \frac{1}{2}x + \cos x + C$$

$$f) \int \operatorname{tg}(x) \cdot \cos(x) \, dx =$$

$$\frac{\operatorname{sen} x}{\cos x} \cdot \cos x$$

$$\operatorname{sen} x \, dx$$

$$-\cos x + C$$

$$g) \int 3 \cdot \sec(x) \cdot \operatorname{ctg}(x) \, dx =$$

$$3 \cdot \frac{1}{\cos x} \cdot \frac{1}{\operatorname{tg} x}$$

$$3 \cdot \frac{1}{\cos x} \cdot \frac{\cos x}{\operatorname{sen} x}$$

$$\frac{3 \cdot \operatorname{sen} x}{\operatorname{sen} x}$$

$$3 \cdot -\cos x + C$$

$$h) \int \frac{3 \cdot dx}{x^2 + 81} =$$

$$3 \cdot \frac{dx}{x^2 + 9^2}$$

$$3 \cdot \frac{1}{9} \operatorname{arc} \operatorname{tg} \frac{x}{9} + C$$

$$\frac{3}{9} \operatorname{arc} \operatorname{tg} \frac{x}{9} + C$$

$$i) \int \frac{2 \cdot dx}{x^2 - 16} =$$

$$2 \cdot \frac{dx}{x^2 - 4^2}$$

$$\frac{2}{8} \ln \left| \frac{x-4}{x+4} \right| + C$$

$$j) \int \frac{-6 \cdot dx}{\sqrt{x^2 + 100}} =$$

$$-6 \cdot \frac{dx}{\sqrt{x^2 + 10^2}}$$

$$-6 \cdot \ln |x^2 + 100| + C$$

$$k) \int \frac{8 \cdot dx}{\sqrt{x^2 - 1}} =$$

$$8 \cdot \frac{dx}{\sqrt{x^2 - 1}}$$

$$8 \cdot \ln|x + \sqrt{x^2 - 1}| + C$$