$$\boxed{\int \frac{\cos^2 x - \sin^2 x}{\sin^2 x \cos^2 x}\, dx =}$$

An integral of cosine square of x minus sine square of x divided by sine square of x times cosine square of x, dx

$$= \int \frac{\cos^2 x}{\sin^2 x \cos^2 x} dx - \int \frac{\sin^2 x}{\sin^2 x \cos^2 x} dx =$$

we can separate an integral into two different integrals with a common denominator (sine square of x times cosine square of x). And now we can cancel cosines square of x and sines square of x.

$$= \int \frac{\cancel{\cos^2 x}}{\sin^2 x \cancel{\cos^2 x}} dx - \int \frac{\cancel{\sin^2 x}}{\cancel{\sin^2 x} \cos^2 x} dx =$$

$$= \int \frac{1}{\sin^2 x} dx - \int \frac{1}{\cos^2 x} dx =$$

After cancelling we have: an integral of one divided by sine square of x, dx minus an integral of one divided by cosine square of x, dx

To compute those integrals we have to know the integration formulas, which say that: an integral of one divided by sine square of x, dx is equal minus cotangent of x plus a constant c and an integral of one divided by cosine square of x, dx is equal tangent of x plus a constant c

$$\boxed{= -\cot x + \tan x + C}$$!

! DON'T FORGET ABOUT THE CONSTANT!

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EAM 1