

$$\int \operatorname{tg}^2 x \, dx = \int (\operatorname{tg}^2 x + \underbrace{1 - 1}_0) \, dx =$$

$$\int (\operatorname{tg}^2 x + 1) \, dx + \int -1 \, dx =$$

$$\operatorname{tg} x - \int dx =$$

$$\boxed{\operatorname{tg} x - x + C}$$