13.16 a

torsdag 22 december 2022 10:51

$$\int \frac{40}{100+x^2}\,dx = \frac{2}{5}\int \frac{1}{1+\left(\frac{x}{10}\right)^2} = \frac{2}{5}\arctan x/10 \cdot 10 + C = 4\arctan x/10 + C$$

$$\int_0^{10} \frac{40}{100+x^2}\,dx = \Big[4\arctan x/10\Big]_0^{10} = 4\cdot \pi/4 = \underline{\underline{\pi}}$$