$$\int \frac{5\,dx}{4+5x^2} = \int \frac{\frac{5}{4}}{\frac{4}{4}+\frac{5x^2}{4}}\,dx =$$

$$\frac{5}{4}\int \frac{1}{1+\left(\frac{\sqrt{5}x}{2}\right)^2}\,dx =$$

$$\frac{5}{4}\cdot\frac{2}{\sqrt{5}}\int \frac{\frac{\sqrt{5}}{2}}{1+\left(\frac{\sqrt{5}x}{2}\right)^2}\,dx =$$

$$\frac{5}{2\sqrt{5}}\ \text{arc.tg}\left(\frac{\sqrt{5}x}{2}\right)+C =$$

RACIONALIZAR

$$\boxed{\frac{\sqrt{5}}{2}\ \text{arc.tg}\left(\frac{\sqrt{5}x}{2}\right)+C}$$