14.31

fredag 23 december 2022 09:05

$$L = \int_0^{\sqrt{5}} \sqrt{(2\theta^2)^2 + (4\theta)^2}\, d\theta = \int_0^{\sqrt{5}} \sqrt{4\theta^4 + 16\theta^2}\, d\theta = \int_0^{\sqrt{5}} 2\theta\sqrt{\theta^2+4}\, d\theta =$$

$$= \left[\frac{2}{3}\cdot(\theta^2+4)^{3/2}\right]_0^{\sqrt{5}} = \frac{2}{3}\left(9^{3/2} - 4^{3/2}\right) = \frac{2}{3}\cdot 19 = \underline{\underline{\frac{38}{3}\ \text{l.e}}}$$