

14.39

fredag 23 december 2022 11:43

$$V = 1600(t - 4t^2) \text{ km/h}$$

$$S = t \cdot V \quad ds = V(t) \cdot dt$$

$$S = \int_0^{1/4} 1600(t - 4t^2) dt = 1600 \int_0^{1/4} t - 4t^2 dt = 1600 \left[ \frac{t^2}{2} - 4 \frac{t^3}{3} \right]_0^{1/4} =$$

$$= 1600 \left( \frac{1}{2} \cdot \frac{1}{4^2} - \frac{\cancel{4}}{3} \cdot \frac{1}{4^{\cancel{3}2}} \right) = 1600 \left( \frac{1}{2} \cdot \frac{1}{16} - \frac{1}{3} \cdot \frac{1}{16} \right) =$$

$$= 1600 \left( \frac{3}{6} \cdot \frac{1}{16} - \frac{2}{6} \cdot \frac{1}{16} \right) = 1600 \left( \frac{1}{6} \cdot \frac{1}{16} \right) =$$

$$= \frac{\cancel{4^2} \cdot \cancel{1000}^{50}}{\cancel{36} \cdot \cancel{4^2}} = \frac{50}{3} \text{ km}$$