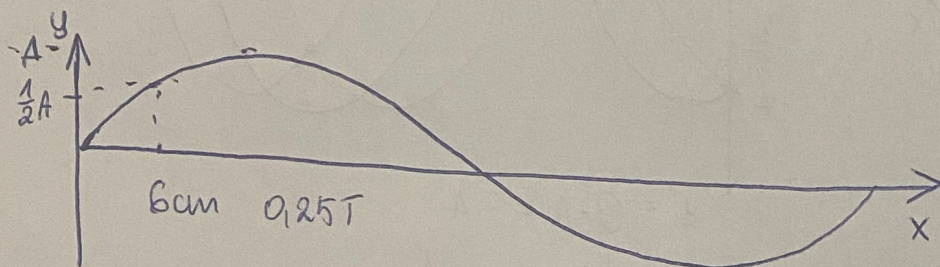


ZAD 36.6.



DANE

$$x = 6 \text{ cm}$$

$$t = 0,25T$$

$$y = \frac{1}{2} A$$

$$\varphi = 0$$

SZUKANE

$$\lambda = ?$$

ROZWIĄZANIE

$$y = A \sin(\omega t - kx)$$

$$\omega = \frac{2\pi}{T}$$

$$k = \frac{2\pi}{\lambda}$$

$$\frac{1}{2} A = A \sin\left(\frac{2\pi}{T} \cdot \frac{1}{4} T - \frac{2\pi}{\lambda} \cdot 0,06\right)$$

$$\frac{1}{2} = \sin 2\pi\left(\frac{1}{4} - \frac{0,06}{\lambda}\right)$$

$$\frac{1}{2} = \sin \frac{\pi}{6}$$

$$\sin \frac{\pi}{6} = \sin 2\pi\left(\frac{1}{4} - \frac{0,06}{\lambda}\right)$$

$$1 = 12\left(\frac{1}{4} - \frac{0,06}{\lambda}\right)$$

$$1 = 3 - \frac{0,72}{\lambda}$$

$$\frac{0,72}{\lambda} = 2 \quad \lambda = 0,36 \text{ m} = 36 \text{ cm}$$

Odp: Najmniejsza odlegość fali wynosi 36 cm.