T1-41   s. 42

$f = 4,0 Hz$

$v = 6,4 m/s$

$l = 4,0 m$

a) $v = f \cdot \lambda$

$\lambda = \dfrac{v}{f} = \dfrac{6,4 m/s}{4,0 Hz} \approx 1,6 m$

$\dfrac{l}{\frac{\lambda}{2}} = \dfrac{4,0 m}{\frac{1,6 m}{2}} = \dfrac{4,0 m}{0,8 m} = 5 kpl$

Kupuja 5 kpl Solmuja 6 kpl

b/ $f = 3,2 Hz$

Jousen pituus on oltava $\frac{\lambda}{2}$ moninkerta, jotta seisova aalto voi

syntyä !
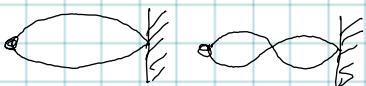
$\lambda = \dfrac{v}{f} = \dfrac{6,4 m/s}{3,2 Hz} = 2,0 m$

$\frac{\lambda}{2} = 1,0 m$ Seisova aalto syntyy !

$\dfrac{4,0 m}{1,0 m} = 4$ Kupujen lkm. 4

T1-42

$f = 2,4 Hz$

$l = 5,7 m$

a)

A
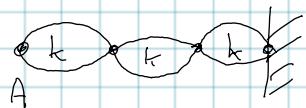
$l = \frac{3}{2} \cdot \lambda$

$5,7 m = \frac{3}{2} \cdot \lambda$

$\lambda \approx 3,8 m$

b/ $v = f \lambda = 2,4 Hz \cdot 3,8 m \approx 9,1 m/s$

T1-43   s. 42 $t = 6,0 s$ 210 kpl $f = \dfrac{210}{6,0 s} = 35 Hz$

$l = 3,0 m$

5. $\frac{\lambda}{2} = 3,0 m$

$\lambda = \dfrac{2 \cdot 3,0 m}{5}$

$v = f \cdot \lambda = 35 Hz \cdot 1,2 m$

$\lambda = 1,2 m$

$v = 42 m/s$