PAG. 895 N 23

$F_{T_1} = 400\,N \qquad v_1 = 200\ m/s$

$F_{T_2} = ? \qquad v_2 = 300\ m/s$

$$v = \sqrt{\frac{F_T}{d_L}}$$

$$v^2 = \frac{F_T}{d_L}$$

$$d_L = \frac{F_T}{v^2}$$

$$\frac{F_{T_1}}{v_1^2} = \frac{F_{T_2}}{v_2^2}$$

$$F_{T_2} = \frac{F_{T_1}}{v_1^2} \cdot v_2^2 = \frac{400\,N}{4\times10^4} \cdot 9\times10^4 = 900\,N$$

PAG. 896 N 31

$a = 80\,cm = 0{,}80\,m$

$\lambda = 15\,m$

$T = 8{,}0\,s$

$\varphi_0 = 0$

$f = ?$

$\omega = ?$

$v = ?$

$$f = \frac{1}{T} = \frac{1}{8{,}0\,s} = 0{,}13\,Hz$$

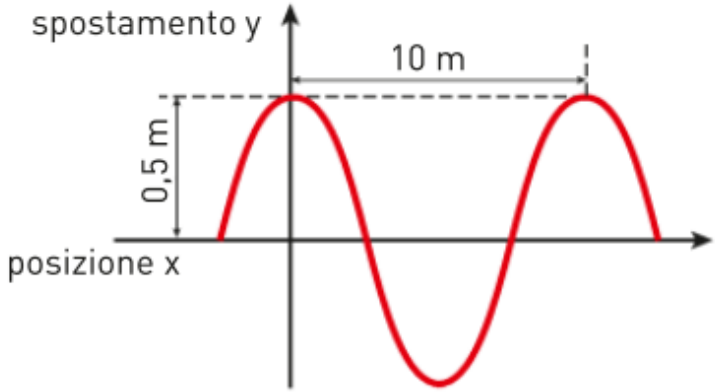
$$\omega = \frac{2\pi}{T} = 0{,}79\,\frac{rad}{s}$$

$$v = \frac{\lambda}{T} = \frac{15\,m}{8{,}0\,s} = 1{,}9\,\frac{m}{s}$$

$$y(t) = a\cos\omega t$$

$$y(t) = (0{,}80\,m)\cos\left(0{,}79\,\frac{rad}{s}\,t\right)$$

PAG. 896 N 33



EQ. GENERALE POSIZ. E TEMPO

$$y(x,t) = (0{,}5\,m)\cos\left(0{,}63\,\frac{rad}{m}\,(x - 5{,}0\,\frac{m}{s}\,t)\right)$$

$$y = a\cos\left(\frac{2\pi}{\lambda}x + \varphi_0\right)$$

$\varphi_0 = 0 \quad \cos 0 = 1$

$a = 0{,}5\,m$

$\lambda = 10\,m$

$v = 5{,}0\,\frac{m}{s}$

$$\omega = \frac{2\pi}{T} = \frac{2\pi v}{\lambda} = 3{,}1\,\frac{rad}{s}$$

EQ. DEL PROFILO ALL'ISTANTE t FISSO

$$y = (0{,}5\,m)\cos\left(0{,}63\,\frac{rad}{m}\,x\right)$$

$$y(t) = (0{,}5\,m)\cos\left(3{,}1\,\frac{rad}{s}\,t\right)$$