

#Jenny



Finally I get this ebook, thanks for all these I can get now!

#Rio



Cool! I'am really happy

#Markus Jensen



I did not think that this would work, my best friend showed me this website, and it does! I get my most wanted eBook

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My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler



so many fake sites. this is the first one which worked! Many thanks

$U = m_1 g \frac{1}{2} \omega^2 + m_2 g \frac{1}{2} \omega^2 + m_3 g \frac{1}{2} \omega^2 + \frac{1}{2} k_1 \omega^2$
 $T_{max} = \frac{1}{2} \left(\frac{m_1^2}{k} \right) \omega^2$, $U_{max} = \frac{1}{2} m_1 g \omega^2 + \frac{1}{2} \left(\frac{m_1^2}{k} \right) \omega^2 + \frac{1}{2} k_1 \omega^2$
 $T_{max} = U_{max}$ gives
 $\omega_n = \sqrt{\frac{m_1 g + \frac{1}{2} \frac{m_1^2}{k} + \frac{1}{2} k_1}{m_1}} = 45.1547 \frac{rad}{sec}$ for given data

1.80 Refer to the figure in the solution of problem 1.71.
 $T = \frac{1}{2} \omega^2$
 $U = \frac{1}{2} k_1 \omega^2 + \frac{1}{2} k_2 (\omega a)^2 + \frac{1}{2} k_3 (\omega b)^2$
 For $\theta(t) = \theta \cos \omega t$, $U_{max} = \frac{1}{2} (k_1 + k_2 a^2 + k_3 b^2) \theta^2$
 $T_{max} = \frac{1}{2} m \omega^2 \theta^2$, $U_{max} = T_{max}$
 $\omega_n = \sqrt{\frac{k_1 + k_2 a^2 + k_3 b^2}{m}}$

1.81 When prism is displaced by x from equilibrium position, the weight of oil displaced = $\rho_o g a b x$ = restoring force
 Mass of prism = $m = \rho_p a b h$
 Equation of motion:
 $m \ddot{x} + \rho_o g a b x = 0$
 $\rho_p a b h \ddot{x} + \rho_o g a b x = 0$
 $\omega_n = \sqrt{\frac{\rho_o g}{\rho_p h}} = \sqrt{\frac{\rho_o}{\rho_p}} \sqrt{\frac{g}{h}}$ (Eq. 1)
 Since ω_n is independent of cross-section of the prism, ω_n remain same even for a circular wooden prism.

1.82 $T = \frac{1}{2} m \dot{x}^2 + \frac{1}{2} k_1 x^2 = \frac{1}{2} (m R^2 + \frac{1}{2} m R^2) \dot{\theta}^2$
 since $x = R \theta$ and $\dot{x} = R \dot{\theta}$.
 $U = \frac{1}{2} k_1 R^2 \theta^2 + \frac{1}{2} k_2 R^2 \theta^2 = \frac{1}{2} (k_1 + k_2) (R^2 + \frac{1}{2} R^2) \theta^2$

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