20-R-VIB-DY-10

Two springs, with spring constants $k = 65 N/m$ each, are used to connect a $m = 14.6 kg$ cargo load to a wall, Assuming the floor is friction-less, determine the first order differential equation describing energy.

Solution

$T + V = \text{constant}$

$T = \frac{1}{2} m v^2$

$V = \frac{1}{2} k x^2 + \frac{1}{2} k x^2 = k x^2$

$T + V = 7.3 v^2 + 65 x^2$