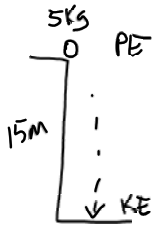
CP – Dec 5

CLT Work KE + PE Problems and Define Conservation of Energy

$PE = mgh$

$KE = \frac{1}{2}mv^2$



$PE_{Top} = KE_{bottom}$

$mgh = \frac{1}{2}mv^2$

$5Kg\left(9.8\frac{M}{S^2}\right)(15M) =$

$735J = KE_{bottom}$

$2(735J) = 2\cdot\frac{1}{2}mv^2$

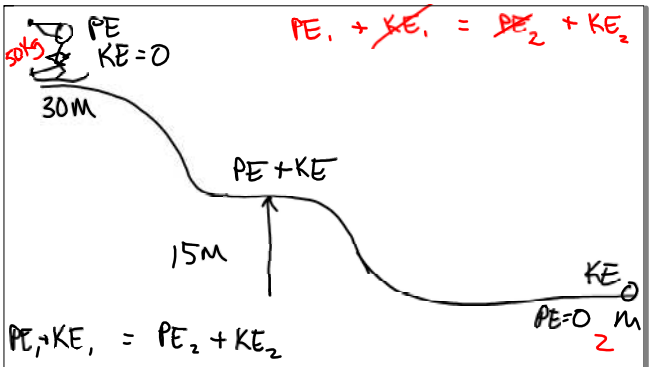
$\frac{1470J}{5Kg} = \frac{mv^2}{m}$

735J From PE

$294\frac{Kg\,m\,m}{S^2}$

$294\frac{m^2}{S^2} = v^2$

$v = 17.15\frac{m}{s}$



PE

$mgh_1 + \frac{1}{2}mv_1^2 = mgh_2 + \frac{1}{2}mv_2^2$

$50Kg(9.8)30m + 0 =$

$50Kg(9.8)(15m) + \frac{1}{2}mv^2$

$14700\,NM = 7350 + \frac{1}{2}mv^2$

$14700 - 7350 = \frac{2}{2}mv^2$

$2(7350NM) = mv^2$

$\frac{2(7350NM)}{50Kg} = v^2$

$294\frac{m^2}{S^2} = v^2$

$17.14\frac{m}{S} = v$