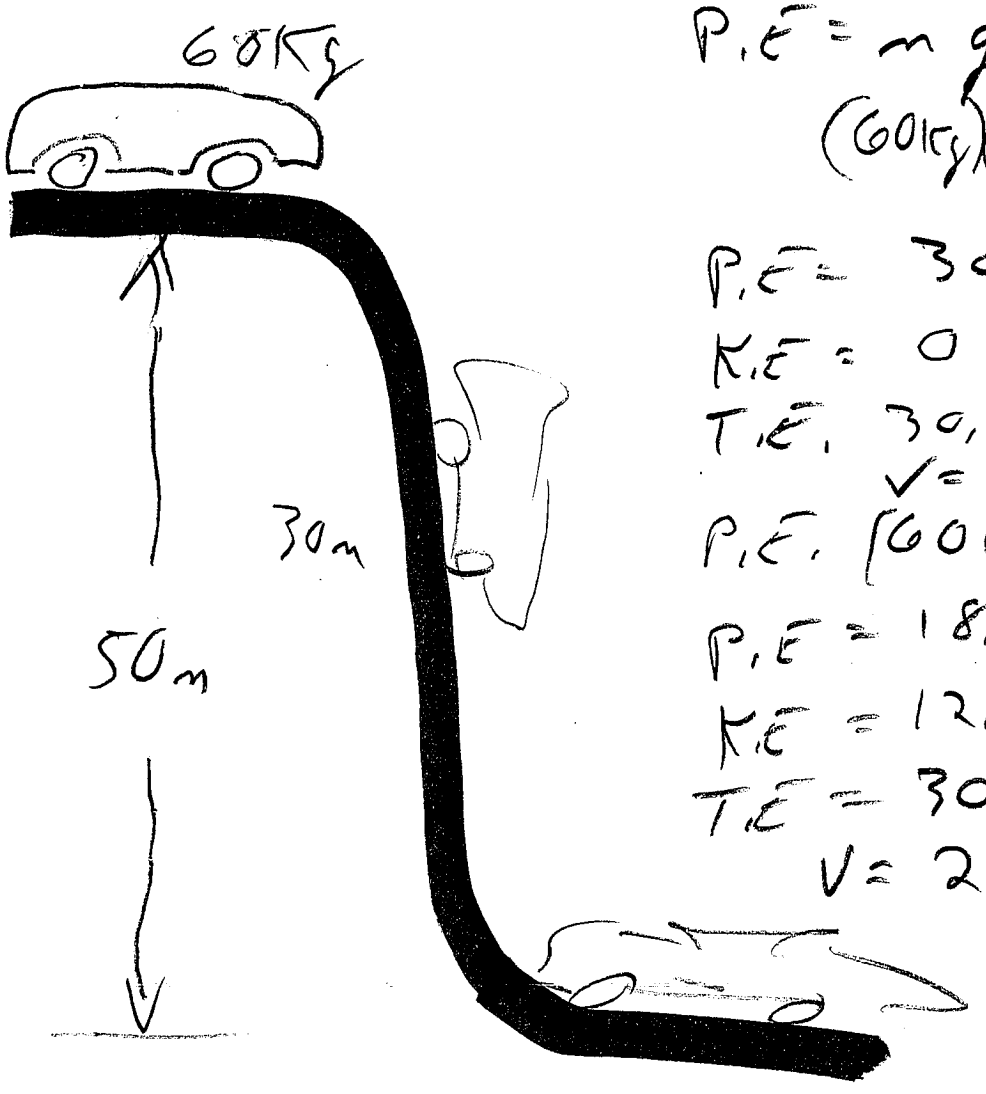

$P.E = mgh$

$(60kg)(10m/s^2)(50m)$

$30,000\ J$

$P.E = 30,000\ J$

$K.E = 0$

$T.E. = 30,000\ J$

$V = 0$

$P.E. = (60kg)(10m/s^2)(30m)$

$P.E = 18,000\ J$

$K.E = 12,000\ J$

$T.E = 30,000\ J$

$V = 20\ m/s$

$P.E = 0$

$K.E = 30,000$

$T.E = 30,000$

$V = 31.6\ m/s$

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

$2KE = mV^2$

$\sqrt{\frac{2KE}{m}} = V$

$\sqrt{\frac{(2)(12,000)J}{60}}$

$\sqrt{\frac{24,000}{60}}$

$\sqrt{400} = 20\ m/s$

$\sqrt{\frac{(2)30,000}{60}}$

$\sqrt{\frac{60,000}{60}}$

$\sqrt{1000}$

$31.6\ m/s$