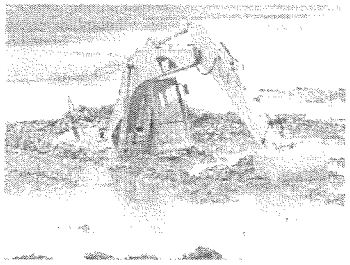
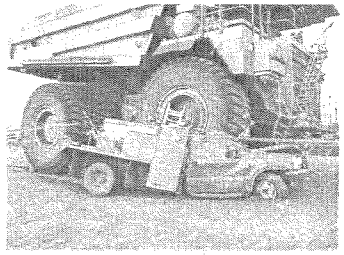
MTA
Manufacturing Technology Academy

Physics Formulas



$F_b = DgV$



$m_1v_1 + m_2v_2 = (m_1 + m_2)v$

Name: Rick Steffe

$V = \frac{d}{T}$

$v = \frac{df - di}{tf - ti} = \frac{\Delta D}{\Delta T} = \frac{d}{t}$ or $v = \frac{df - di}{t}$

$A = \frac{Vf - vi}{tf - ti} = \frac{\Delta V}{\Delta T} = \frac{V}{t}$ $a = \frac{vf - vi}{t}$

$V = at$

$T = \frac{V}{a}$

$Vf = at + Vi$

$a = \frac{m}{s^2}$

$V = \frac{m}{s}$

$d = m$

$g = -9.8 m/s^2, -32 ft/s^2$

$dy = \frac{1}{2}gt + Viyt$

$dy = \frac{1}{2}gt^2$

$Vy = gt$

$Vx = \frac{dx}{t}$ (Horizontal (x))

$dx = vxt$

$Vfx = vix + a_x t$

$Vfy = Viy + gt$ (Vertical y)

$dy = vit + \frac{1}{2}gt^2$

Electric

$F = \frac{k q_1 q_2}{d^2}$

$k = 9 \times 10^9 \frac{N \cdot m^2}{C^2}$

$E = \frac{F}{q_0}$

$E = \frac{K q_1}{d^2}$

$C = \frac{\Delta Q}{V}$

If = ? Farads

$P = \frac{W}{\Delta T} = \frac{\Delta Q V}{\Delta t} = IV$

$dx = Vx t$

$\bar{v} = \frac{vf + vi}{2}$

$Vf^2 = vi^2 + 2ax$

$vf^2 = vi^2 - 2gdy$

$vf = vi + gt$

$dy = \frac{1}{2}(\frac{32.2 ft}{s^2})$

$W = mg$

$1 lb = \frac{1 slug \cdot ft}{s^2}$

$9.8 N/kg = 9.8 m/s^2$

$32.2 lbs/slug = 32 ft/s^2$

$F = ma$

$a = \frac{F}{m}$

$m = \frac{F}{A}$

$Ff = \mu \cdot Fn$

$\mu = \frac{Ff}{Fn}$

$P = mv$ - momentum

$J = Ft$ - Impulse

$Ft = mv$

$m_1 v_{1i} + m_2 v_{2i} = m_1 v_{1f} + m_2 v_{2f}$

P = lb/in², N/m², PSI, Pa

a = ft/s², m/s²

I = N·s

Power: N·m/s, J/s, watts

v = m/s, m/s, km/h, ft/s, mi/h

momentum: kg·m/s

F = kg·m/s², lb

d = m, ft

m = slug, kg

work = lb·ft, J

$W = F \cdot d$

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

$PE = mgh$

$F = \frac{G m_1 m_2}{d^2}$

$g = \frac{Gm}{d^2}$

Escape velocity: v_e

$v_e = \sqrt{\frac{2Gm}{d}}$