THE '63 VETTE WAS ABLE TO GO FROM 0 → 60 IN 6S – WHAT WAS ITS "a"?

$V_i = 0$ MPH

$V_f = 60$ MPH

$\Delta t = 6s$

$$a = \frac{\Delta V}{\Delta t} = \frac{V_f - V_i}{\Delta t} = \frac{10 \text{ MPH}}{s}$$

$$\left[\frac{10 \text{ MILES}}{(\text{HR})(s)}\right]\left[\frac{5280 \text{ FT}}{\text{MILE}}\right]\left[\frac{\text{HR}}{3600 s}\right] = \left[14.6 \frac{\text{FT}}{s^2}\right]\left[\frac{M}{3.28 \text{ FT}}\right]$$

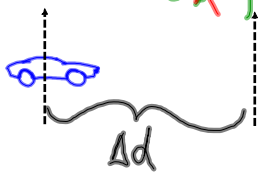
$$= \left[4.45 \frac{M}{s^2}\right]$$

$$\frac{\left[4.45 \frac{M}{s^2}\right]}{\left[\frac{9.81 \text{ M/s}^2}{g}\right]} =$$

$$\left[\frac{4.45 \text{ M}}{s^2}\right]\left[\frac{g}{9.81 \text{ M/s}^2}\right] = 0.45\, g$$

THE '63 VETTE WAS ABLE TO GO FROM 0 to 60 IN 6 S – WHAT WAS IT "a".

$a = ?$ $\quad a \neq \left[\frac{M \cdot Hr}{S}\right] \rightarrow \frac{\Delta d}{\Delta t} = V \quad \Delta t = 6S$



$V_i = 0\,MPH$

$V_f = 60\,MPH$

ΔV = change in velocity

$= 60\,MPH$

$= V_f - V_i$

$\Delta d = 5\,M$

$$a = \frac{\Delta V}{\Delta t} = \frac{V_f - V_i}{\Delta t} = \frac{60\,MPH - 0\,MPH}{6S}$$

$$= \frac{60\,MPH}{6S} = \frac{10\,MPH}{S} = \frac{10\,Miles}{(Hr)(SEC)}$$

$$\left[\frac{10\,Miles}{(Hr)(S)}\right]\left[\frac{5280\,FT}{Mile}\right]\frac{Hr}{3600S} = 14.7\,\frac{FT}{S^2}$$

g = ACCELERATION DUE TO GRAVITY $= -9.81\,\frac{M}{S^2}$

$$\left[9.81\,\frac{M}{S^2}\right] \text{ vs } \left[\frac{14.7\,FT}{S^2}\right]\left[\frac{M}{3.28\,FT}\right] = 4.48\,M/S^2$$

$$\frac{\left[9.81\,\frac{M}{S^2}\right]}{g}$$

$$\frac{4.48\left(\frac{M}{S^2}\right)}{\left[\frac{\left(9.81\,\frac{M}{S^2}\right)}{g}\right]} = \frac{\left[4.48\left(\frac{M}{S^2}\right)\right]}{[1]}\frac{g}{\left(9.81\,\frac{M}{S^2}\right)} = .456g \cong \frac{1}{2}g$$

① $V_{ave} = 5\ m/s$

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

$t = \frac{d}{v} = \quad \Delta d = 5\ m$

$t = \frac{5\ m}{5\ m/s} = 1\ s$

e.g.

How to show work on test (extra) sheets