If you divide a number with units of $\frac{[KG][M]}{[S^2]}$ by a number with units of $[M/S]$, WHAT will the units of your answer be??

$$\frac{\left[\frac{3}{5}\right]}{\left[\frac{4}{7}\right]} = \left[\frac{3}{5}\right]\left[\frac{7}{4}\right] = \frac{21}{20} = 1\frac{1}{20} = 1.05$$

$1\frac{1}{20}$

$F = ma$

$$\frac{\frac{[KG][M]}{[S][S]}}{\left[\frac{M}{S}\right]} = \frac{[KG][M]}{[S][S]}\,\frac{[S]}{[M]} = \left[\frac{KG}{S}\right]$$

a ← Velocity

50 MPH vs 10 m/s - WHICH IS FASTER??

$$\left[\frac{50\ \text{Miles}}{1\ \text{HR}}\right]\left[\frac{5280\ \text{FT}}{1\ \text{Mile}}\right]\left[\frac{1\ \text{M}}{3.28\ \text{FT}}\right]\left[\frac{1\ \text{HR}}{3600\ \text{S}}\right] = 22.36\ \frac{\text{M}}{\text{S}}$$

$\left[\frac{75\,KM}{HR}\right] \longrightarrow ?\,\frac{FT}{S}$

$\left[\frac{3.28\,FT}{M}\right]$ $\left[\frac{75000M}{HR}\right]\left[\frac{3.28ft}{M}\right]=\left[\frac{246000ft}{HR}\right]$

$k \rightarrow kilo \rightarrow 10^3$ $\left[\frac{1HR}{3600S}\right]=(68.\bar{3}ft/S)$

$\left[\frac{75000\cancel{M}}{\cancel{HR}}\right]\left[\frac{3.28ft}{\cancel{M}}\right]=\left[\frac{246000ft}{\cancel{HR}}\right]\left[\frac{\cancel{1HR}}{3600S}\right]=(68.\bar{3}ft/S)$

$\left[\frac{75\cancel{KM}}{\cancel{HR}}\right]\left[\frac{1000\cancel{M}}{\cancel{KM}}\right]\left[\frac{\cancel{HR}}{3600(S)}\right]\left[\frac{3.28(FT)}{\cancel{M}}\right]=(68.3FT/S)$

$$\frac{\frac{[KG][M]}{[S^2]}}{\frac{[M]}{[S]}}$$

$$\left[\frac{KG}{S}\right]$$

$$\frac{\left[\frac{3}{7}\right]}{\left[\frac{5}{6}\right]} = \left[\frac{3}{7}\right]\left[\frac{6}{5}\right] = \frac{18}{35} = 0.5N$$

$$\frac{\frac{(KG)(M)}{(S)(S)}}{\frac{M}{S}} = \frac{(KG)(M)}{(S)(S)}\left[\frac{S}{M}\right] = \left[\frac{kg}{s}\right]$$

$$\frac{75\,KM}{HR} \quad 10^3$$

$$= \left[\frac{75{,}000\,M}{HR}\right]\left[\frac{HR}{3600S}\right]\left[\frac{3.28\,FT}{M}\right] = 68.3\frac{FT}{S}$$

$$\left(\frac{5280\,FT}{MILE}\right)$$

$$\left[\frac{3.28\,FT}{M}\right]$$

46.5
1.38 $\left[\frac{FT}{S}\right]$
63
$68.\bar{3}$
~~20.83~~

$3 \times 10^8 \frac{M}{S}$

~~3.54×10^{12} MPH~~

562.1 MPH

$\frac{5280 FT}{Mile}$

$\left[\frac{3.28 FT}{M}\right]$

623,419

$\left[3 \times 10^8 \frac{M}{S}\right]\left[\frac{3.28 FT}{M}\right]\left[\frac{3600 S}{HR}\right]\left[\frac{Mile}{5280 FT}\right] = 6.7 \times 10^8 MPH$

$\frac{(6.7)(10^8)(Miles)}{(HR)}\left(\frac{24 HR}{DAY}\right)\left(\frac{365 DAYS}{YR}\right)$

$(58692.)(10^8)$

$(5.9)(10^{12})\left(\frac{Miles}{YR}\right)$