PP/22 (FOP)

$A \propto B^2$ $\quad G^2 \propto H$

$C \propto \frac{1}{D}$ $\quad K^2 \propto \frac{1}{L}$

$E \propto F^3$ $\quad M^3 \propto N$

P38

26. a) $y \propto \frac{1}{x}$

b) $B^2 \propto A$

c) $N \propto m^3$

27. a) $v^2 \propto F$

b) $R^2 \propto \frac{1}{F}$

c) ???

c)

T	R
7.6	5.8
30	15
380	78
930	143

50 → 380 (×7.6), 13.448 → 78 (×5.2)

$13.448^x = 50$

$\log(13.448^x) = \log 50$

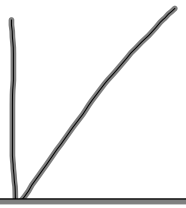
$x \log 13.448 = \log 50$

$x = \frac{\log 50}{\log 13.448}$

$x = 1.5 = \frac{3}{2}$

$T \propto R^{\frac{3}{2}}$

$T^2 \propto R^3$ $\quad T^2$



Using Proportioning Techniques in Physics

proportionality → equation

equation → proportionality.

$$a_c = \frac{4\pi^2 R}{T^2} \quad (k = 4\pi^2) \quad \Rightarrow \quad a_c \propto R$$

$$a_c \propto \frac{1}{T^2}$$

SP1

$F \propto v^2$ (F' is the new force)

$F = kv^2$

new F → $F' = k(3v)^2$ (new v)

$F' = k(9v^2)$ (the old F)

$F' = 9(kv^2)$

$F' = 9F$

$(3v)^2$

SP2

$V = 1.0 \times 10^5 L$

double all dimensions

$V' = ?$

$V = \pi r^2 h$

$V' = \pi(2r)^2(2h)$

$V' = \pi(4r^2)(2h)$

$V' = 8\pi r^2 h$

$V' = 8V$

$V' = 8(1.0 \times 10^5 L)$

$V' = 8.0 \times 10^5 L$

Sep 16-2:26 PM

One more....

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

triple m_1
quarter m_2
double d

$$F_g' = \frac{G(3m_1)\left(\frac{m_2}{4}\right)}{(2d)^2}$$

$$F_g' = \frac{\frac{3}{4} G m_1 m_2}{4d^2}$$

$$F_g' = \frac{3}{16} \frac{G m_1 m_2}{d^2} \quad \leftarrow F_g$$

$$F_g' = \frac{3}{16} F_g$$

Hw: (FOP Booklet)
p30 | PP
ADV
Assignment: p38 | 28 - 34 (35+36) => WED
Quiz -> TUES