

Variation Functions WS #1

① $r = kt$
 $.5 = 10k$
 $k = .05$

$$r = .05t$$

$$1.25 = .05t$$

$$t = 25$$

25 seconds

④ inversely

$$I = \frac{k}{d}$$

$$10 = \frac{k}{1}$$

$$k = 10 \text{ Wp sq.m.}$$

$$I = \frac{10}{d}$$

$$I = \frac{10}{15}$$

$$I = 0.67 \text{ watts/sq.m.}$$

(?) check w/ Dani

WS #2

② $t = \frac{k}{r}$

$$50 = \frac{k}{40}$$

$$k = 2000$$

$$t = \frac{2000}{r}$$

③ $s = \frac{k}{r}$

$$2.5 = \frac{k}{30}$$

$$k = 75$$

$$s = \frac{75}{r}$$

$$s = \frac{75}{3} = 25 \text{ ft/sec}$$

④ $s = k\sqrt{d}$

$$48 = k\sqrt{36}$$

$$k = 8$$

$$s = 8\sqrt{d}$$

$$80 = 8\sqrt{d}$$

$$d = 100$$

must fall 64 ft more

⑤ $d = \frac{k}{w}$

$$6 = \frac{k}{120}$$

$$k = 720$$

$$d = \frac{720}{w}$$

$$d = \frac{720}{108}$$

$d \approx 6.67$ feet
from fulcrum

⑥ $T = kVP$

$$294 = k(8000)(.75)$$

$$k = .049$$

$$T = .049VP$$

$$T = .049(7000)(.87)$$

$$T = 298.41^\circ\text{K}$$

⑦ $I = tPK$

$$106.25 = k\left(\frac{1}{4}\right)(5000)$$

$$k = .085$$

$$I = .085tP$$

$$I = .085\left(\frac{9}{12}\right)(5000)$$

$$I \approx \$318.75$$

P392

① a) $P = Kk$
 $110 = K50$
 $K = 2.2$

$P = 2.2K$

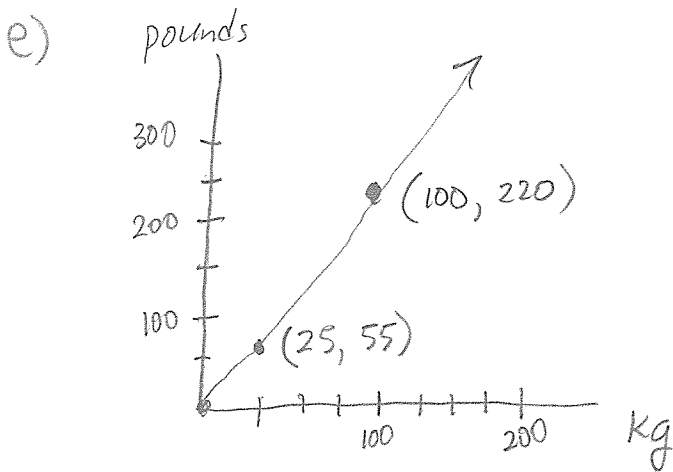
- b) i) 220 pounds
ii) 55 pounds
iii) 330 pounds

c) $165 = 2.2K$

$K = 75 \text{ kg}$

d) $127 = 2.2K$

$K = 57.72$



f) 2.2 pounds/kg

③ a) $h = K \cdot d^2$
 $50 = K10^2$
 $K = \frac{1}{2}$

$h = \frac{1}{2}d^2$

b) $h = \frac{1}{2}(30^2)$

$h = 450 \text{ houses}$

$h = \frac{1}{2}43^2$

$h = 924 \text{ houses}$

$h = 100^2 \frac{1}{2}$

$h = 5000 \text{ houses}$

c) $1500 = \frac{1}{2}d^2$

$d = \sqrt{3000} \approx 54.77$

55 cm