

8-9 Day 2

1) 75  
2) 1.2 or 6/5  
3) 5.95  
4) 0.667 or 2/3  
5)  $k = \frac{1}{h} ; \frac{7}{10}$  or 0.7  
6)  $k = \frac{h}{a} ; 49$   
7)  $k = \frac{p}{r} ; 0.021$   
8)  $k = \frac{r}{p} ; \frac{1}{60}$  or 0.017

11) \$900  
12) 294 mi  
13) 17 min  
14) 585 V  
15) 156 m<sup>2</sup>  
16) 165 servings  
17) 55 g  
18) 5 units

19-22, work needed  
19) yes  
20) no  
21) no  
22) yes

23 a) 

d	1	2	?	?	5
C	1.50	3	4.50	?	?

  
b)  $C = 1.5 \cdot d = \frac{3}{2}d$   
c)   
d) \$33

24 b)  $m = k \cdot a$   
d)  $k \approx 0.4$  (answers vary)  
e) ?

3)  $(x_1, 7) (7.65, 9)$

$y = kx$   
 $9 = k(7.65)$   
 $\frac{9}{7.65} = k$   
 $1.176 = k$

$y = 1.176x$   
 $7 = 1.176x$   
 $\frac{7}{1.176} = x$   
 $5.952 = x_1$

$\frac{y_1}{x_1} = \frac{y_2}{x_2}$   
 $\frac{7}{x_1} = \frac{9}{7.65}$   
 $7(\frac{x_1}{7} = \frac{7.65}{9})$   
 $x_1 = \frac{(7.65)(7)}{9}$   
 $x_1 = 5.95$

4)  $(\frac{1}{10}, \frac{1}{6}) (\frac{2}{3}, y_2)$

$\frac{y_1}{x_1} = \frac{y_2}{x_2}$   
 $\frac{\frac{1}{6}}{\frac{1}{10}} = \frac{y_2}{\frac{2}{3}}$   
 $\frac{1}{6} \div \frac{1}{10} = y_2 \div \frac{2}{3}$   
 $\frac{1}{6}(\frac{10}{1}) = y_2(\frac{3}{2})$   
 $\frac{10}{6} = \frac{3}{2}y_2$   
 $\frac{10}{3} = \frac{3}{2}y_2$   
 $\frac{10}{3} \cdot \frac{2}{3} = y_2$   
 $\frac{20}{9} = y_2$

$y = kx$   
 $10(\frac{1}{6} = k(\frac{1}{10}))$   
 $\frac{10}{6} = k$   
 $\frac{5}{3} = k$   
 $y_2 = \frac{2}{3}(\frac{5}{3})$   
 $y_2 = \frac{10}{9}$

$l = kh$  (h, l)  
(20, 14)  
a)  $\frac{l}{h} = k$   
b)  $\frac{14}{20} = k$   
 $\frac{7}{10} = k$

$h = km$  (m, h)  
(1, 49)  
a)  $k = \frac{h}{m}$   
b)  $k = \frac{49}{1} = 49$

7)  $R = kL$

a)  $\frac{R}{L} = k$   
 $\frac{10295}{500} = k$   
 $.2059 = k$   
 $.021 = k$

b)  $\frac{V}{T} = k$   
a)  $k = \frac{V}{T}$   
b)  $k = \frac{5}{300} = \frac{1}{60}$

9)  $w = kt$  (S, w)  
(18, w<sub>2</sub>)

$\frac{w_1}{t_1} = \frac{w_2}{t_2}$   
 $\frac{100}{5} = \frac{w_2}{18}$   
 $(20 = \frac{w_2}{18}) 18$   
 $360 = w_2$

k method  
 $w = kt \rightarrow w = 20t$   
(300)  $100 = k(5)$   
 $\frac{100}{5} = k$   
 $20 = k$   
 $w = 20(18)$   
 $w = 360$

10)  $(3, 15) (t, 9)$   
 $(35, 92)$

$g = kt \rightarrow g = 5t$   
 $15 = k(3)$   
 $5 = k$   
 $g_2 = 5(35)$   
 $g_2 = 175 \text{ gal}$

13)  $n = kt$  (t, n)  
(5, 275)  
(42, 935)  
17 minutes

$275 = k(5)$   
 $55 = k$   
 $n = 55t$   
 $935 = 55t$   
 $17 = t$

Proportion  
 $\frac{n_1}{t_1} = \frac{n_2}{t_2}$   
 $\frac{275}{5} = \frac{935}{t_2}$   
 $\frac{5}{275} = \frac{t_2}{935}$   
 $t_2 = 17$

14)  $F = kC$  (C, F)  
(32, 268)  
(65, F<sub>2</sub>)

k method  
 $F = kC$   
 $268 = k(32)$   
 $9 = k$   
 $F_2 = 9(65)$   
 $F_2 = 585 \text{ V}$

proportion  
 $\frac{F_1}{C_1} = \frac{F_2}{C_2}$   
 $65(\frac{268}{32} = \frac{F_2}{65})$   
 $585 \text{ V} = F_2$

18)  $C = kp$  (2500, 5)  
 (3750, 6)

**k method**

$C = kp \rightarrow C = \frac{1}{500} P$   
 $5 = k(2500) \quad C_2 = \frac{1}{500}(3750)$   
 $\frac{5}{2500} = k \quad \boxed{C_2 = 7.5 \text{ units}}$   
 $\frac{1}{500} = k$

**Proportion**

$\frac{P_1}{C_1} = \frac{P_2}{C_2}$   
 $\frac{2500}{5} = \frac{3750}{C_2}$  **Flip**  
 $(\frac{5}{2500} = \frac{C_2}{3750}) 3750$   
 $\boxed{7.5 \text{ units} = C_2}$

19)  $\frac{x_1}{x_2} = \frac{y_1}{y_2}$       $\frac{y_1}{y_2} = \frac{x_1}{x_2}$       $\frac{y_1}{x_1} = \frac{y_2}{x_2}$  **Yes**  
 Symmetric prop. =

**Proportion**

$\frac{y_1}{x_1} = \frac{y_2}{x_2}$

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**Legal Moves**

2)  $\frac{y_1}{x_2} = \frac{y_2}{x_1}$  **No**  
 can't switch bottoms

$\frac{a_1}{b_1} = \frac{a_2}{b_2}$  **top/bottom**