

# C1 Problems

HW 2, 3, 4, 8, 9, 12, 19, 26, 29, 38, 44

2) A) 86900 B) 7100 C) .66 D) 876 E) .0000862

3) A)  $1.156 \times 10^6$  B)  $2.18 \times 10^2$  C)  $6.8 \times 10^{-3}$  D)  $2.7635 \times 10^1$  E)  $2.1 \times 10^{-1}$   
F)  $2.2 \times 10^1$

4) A) 3 B) 4 C) 3 D) 1 E) 2 F) 4 G) 2

8) 1.5M

9) 180200 s

12) A) 1 GV B) 1  $\mu$ m C) 5 Kdays D) 8 h bucks E) 8 n Pieces

19) A)  $\frac{\text{km}}{\text{hr}} \cdot \frac{1 \text{ mi}}{1.6 \text{ km}} = .625 \frac{\text{mi}}{\text{hr}}$

B)  $\frac{\text{in}}{\text{s}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{100 \text{ cm}}{1 \text{ m}} = \frac{3.28 \text{ ft}}{\text{s}}$

C)  $\frac{\text{km}}{\text{hr}} \cdot \frac{1000 \text{ m}}{1 \text{ km}} \cdot \frac{1 \text{ hr}}{3600 \text{ s}} = .2778 \text{ m/s}$

26) Avg 70  $\frac{\text{beats}}{\text{min}}$        $\frac{70 \text{ beats}}{\text{s}} \cdot \frac{60 \text{ s}}{1 \text{ hr}} \cdot \frac{24 \text{ hr}}{1 \text{ day}} \cdot \frac{365 \text{ day}}{1 \text{ yr}} \times 75 \text{ years}$   
Avg 75 yrs old       $2.76 \times 10^{10} \frac{\text{beats}}{\text{Life}}$

29) Pop SFO 816,000      2 visits / yr  
" " Brighton 7500      8 people / day

1 dentist  $\div$   $\frac{8 \text{ people}}{\text{day}} \cdot 312 \text{ days} \cdot \frac{1}{2} = 1 \text{ dentist} / 1248 \text{ people}$

SFO = 660 dentist      Brighton = 6 dentist

21

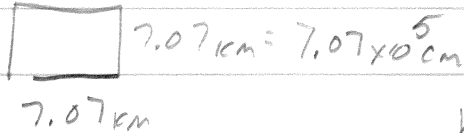
HW Continued

38)  $1200 \text{ L water / family / day} = 300 \text{ L / person / day}$

Used  $300 \times 10^3 \text{ cm}^3 = 3 \times 10^6 \text{ cm}^3 = \times 40000 = 1.2 \times 10^{10} \text{ cm}^3 / \text{town / day}$

Lake Area =  $50 \text{ km}^2$  Lake

Volume =  $L \times W \times H$



$$h = \frac{\text{Vol}}{(L \times W)} = \frac{1.2 \times 10^{10} \text{ cm}^3}{(7.07 \times 10^5 \text{ cm})^2}$$

$$h = .024 \text{ cm/day} \left( \frac{3 \text{ cm}}{\text{day}} \right) = 8.76 \text{ cm}$$

40

44)  $1 \text{ cub. ft} = .46 \text{ m}$  Ark is  $300 \text{ cub. ft L}$

$50 \text{ cub. ft W}$

$30 \text{ cub. ft H}$

Ark =  $138 \text{ m L} \times 23 \text{ m H} \times 13.8 \text{ m}$