

$$W = 2000 + 1000 \sin\left(\frac{\pi t}{6}\right)$$

$$V.S. = 2000$$

$$Amp = 1000$$

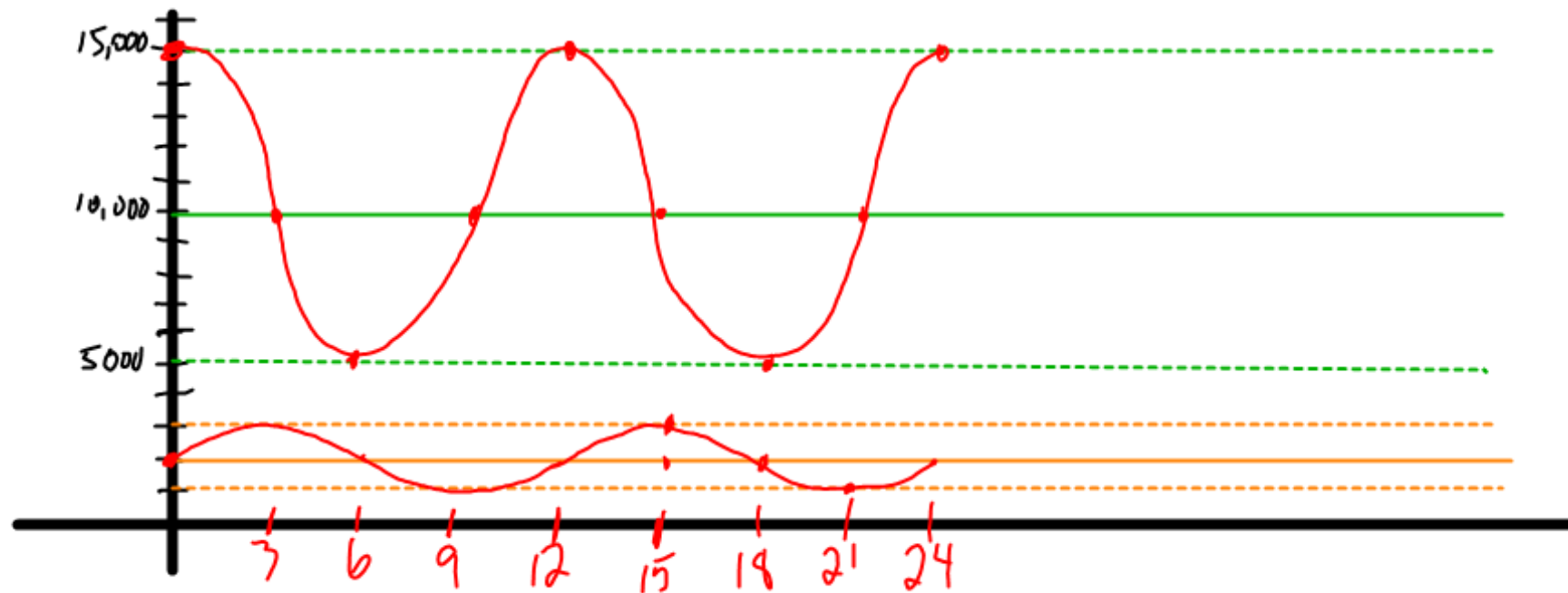
$$Per = \frac{2\pi}{\pi/6} = 2\pi \cdot \frac{6}{\pi} = 12$$

$$S = 10,000 + 5000 \cos\left(\frac{\pi t}{6}\right)$$

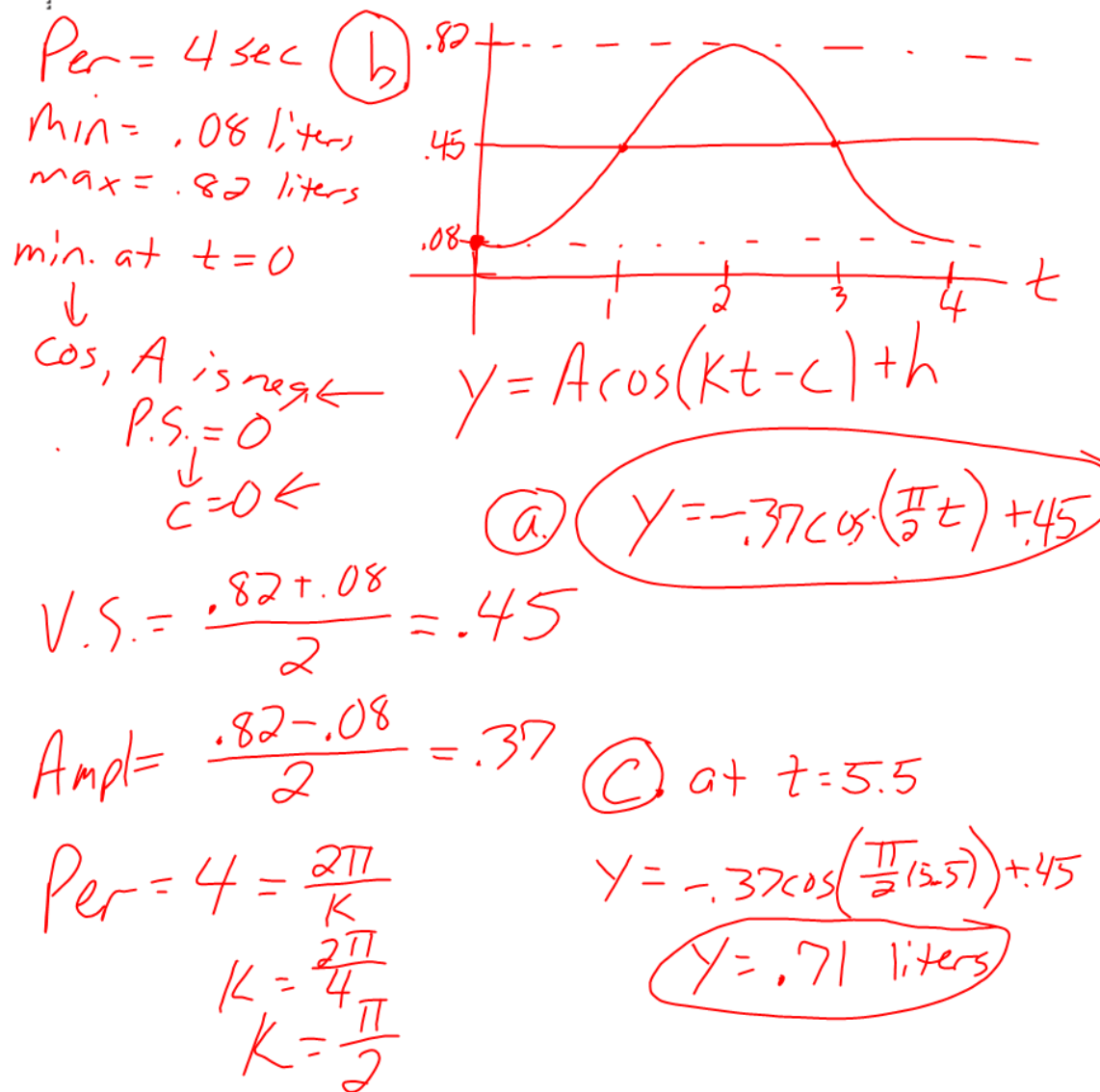
$$V.S. = 10,000$$

$$Amp = 5000$$

$$Per = \frac{2\pi}{\pi/6} = 12$$



- 2 HEALTH** An average seated adult breathes in and out every 4 seconds. The average minimum amount of air in the lungs is 0.08 liter, and the average maximum amount of air in the lungs is 0.82 liter. Suppose the lungs have a minimum amount of air at $t = 0$, where t is the time in seconds.



$$\max = 13.75$$

$$\min = 10.53$$

$$\text{Per} = 12$$

$$\text{Amp} = \frac{13.75 - 10.53}{2} = 1.61$$

$$\text{V.s} = \frac{13.75 + 10.53}{2} = 12.14$$

$$\text{Per} = 12 = \frac{2\pi}{k}$$

$$k = \frac{2\pi}{12} = \frac{\pi}{6}$$

$$y = A \cos(kt - c) + h$$

$$y = -1.61 \cos\left(\frac{\pi}{6}t - c\right) + 12.14$$