

Latsool ffk 5 2

1. $a_{\text{lift}} = 0 \text{ m/s}^2 \rightarrow T = 20$

$a_{\text{lift}} = 30 \text{ m/s}^2 \rightarrow T = ?$

$g = 10 \text{ m/s}^2$

$$\frac{T}{T'} = \frac{2\pi\sqrt{\frac{k}{g}}}{2\pi\sqrt{\frac{k}{g+a}}}$$

$$\Leftrightarrow \frac{T}{T'} = \sqrt{\frac{g+a}{g}} = \sqrt{\frac{40}{10}} = 2$$

$$\frac{T}{T'} = 2 \Leftrightarrow \frac{2}{T'} = 2$$

$$T' = 10$$

2. $m = 0,5 \text{ kg}$, $x = 20 \text{ cm} = 0,2 \text{ m}$ ke kanan.

$T = 0,8 \text{ s}$

a. x kekal $v = 1 \text{ m/s}$

$$v = \pm \sqrt{\frac{k}{m}} \sqrt{A^2 - x^2}$$

$$v = \pm \frac{2\pi}{T} \sqrt{A^2 - x^2}$$

$$1 = \pm \frac{2\pi}{0,8} \sqrt{0,2^2 - x^2}$$

$$\frac{0,8}{2\pi} = \pm \sqrt{0,2^2 - x^2}$$

$$\frac{0,16}{\pi^2} = 0,2^2 - x^2$$

$$x^2 = 0,04 - \frac{0,16}{\pi^2}$$

$$x = \pm \sqrt{0,04 - \frac{0,16}{\pi^2}}$$

$$x \approx \pm 0,154 \text{ m}$$

$$x \approx \pm 15,4 \text{ cm}$$

b. $k = ?$

$$T = 2\pi \sqrt{\frac{m}{k}}$$

$$0,8 = 2\pi \sqrt{\frac{0,5}{k}}$$

$$\left(\frac{0,8}{2\pi}\right)^2 = \frac{0,5}{k}$$

$$k = 0,5 \cdot \frac{4\pi^2}{0,16}$$

$$k \approx 123,37 \text{ N/m}$$

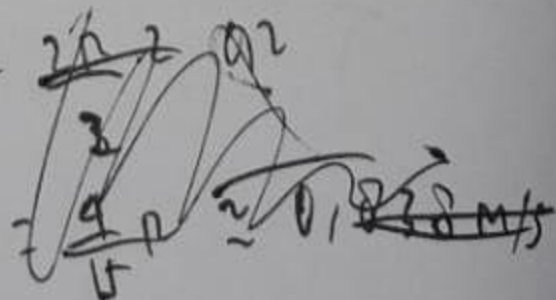
3. $x = 20 \text{ cm} = 0,2 \text{ m}$ ke kanan ($t=0$)
 $t = 10 \text{ s} \rightarrow 15 \text{ orban}$

A. $T = ?$ $T = \frac{10}{15} = \frac{2}{3} = 0,67 \text{ s}$

B. $V_{\text{max}} = ?$

$$V_{\text{max}} = \omega A$$

$$= \frac{2\pi}{T} A = \frac{2\pi}{\frac{2}{3}} \cdot 0,2$$



$$= \frac{2\pi \cdot 3 \cdot 0,2}{2} = 0,6\pi \approx 1,88 \text{ m/s}$$