

- oscillators.

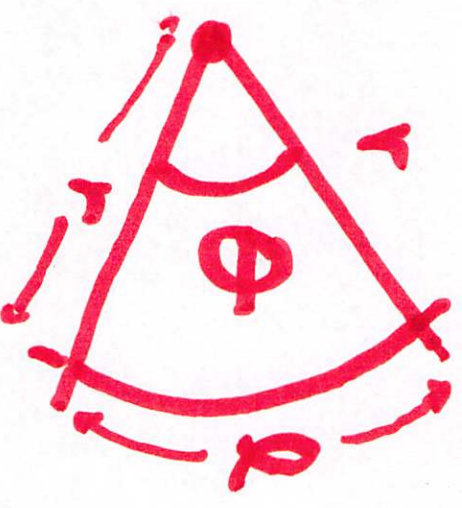
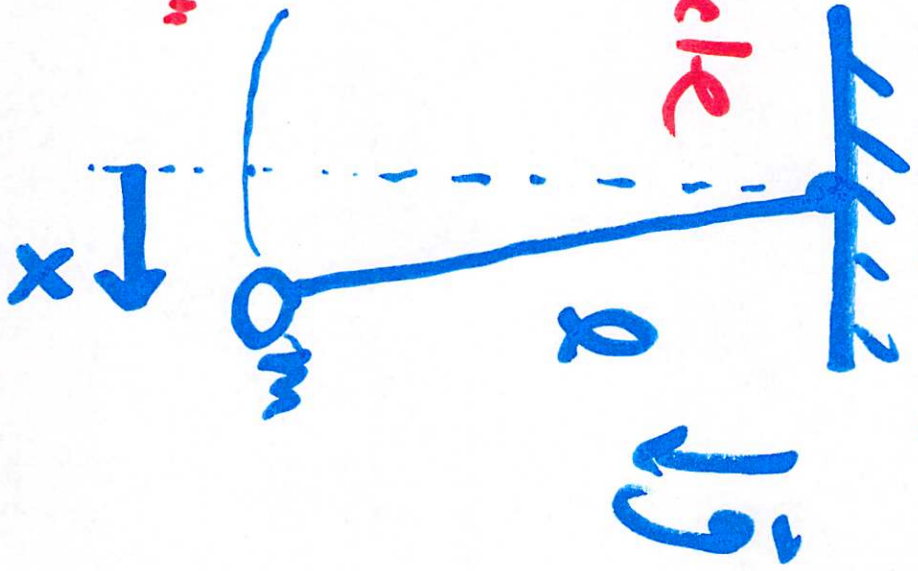
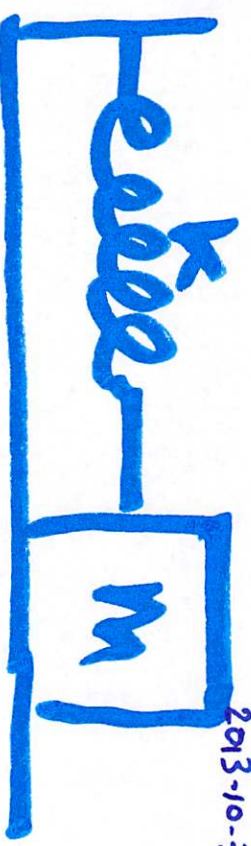
- amplitude  $m$ , length

period  $s$ , time, 1 full cycle

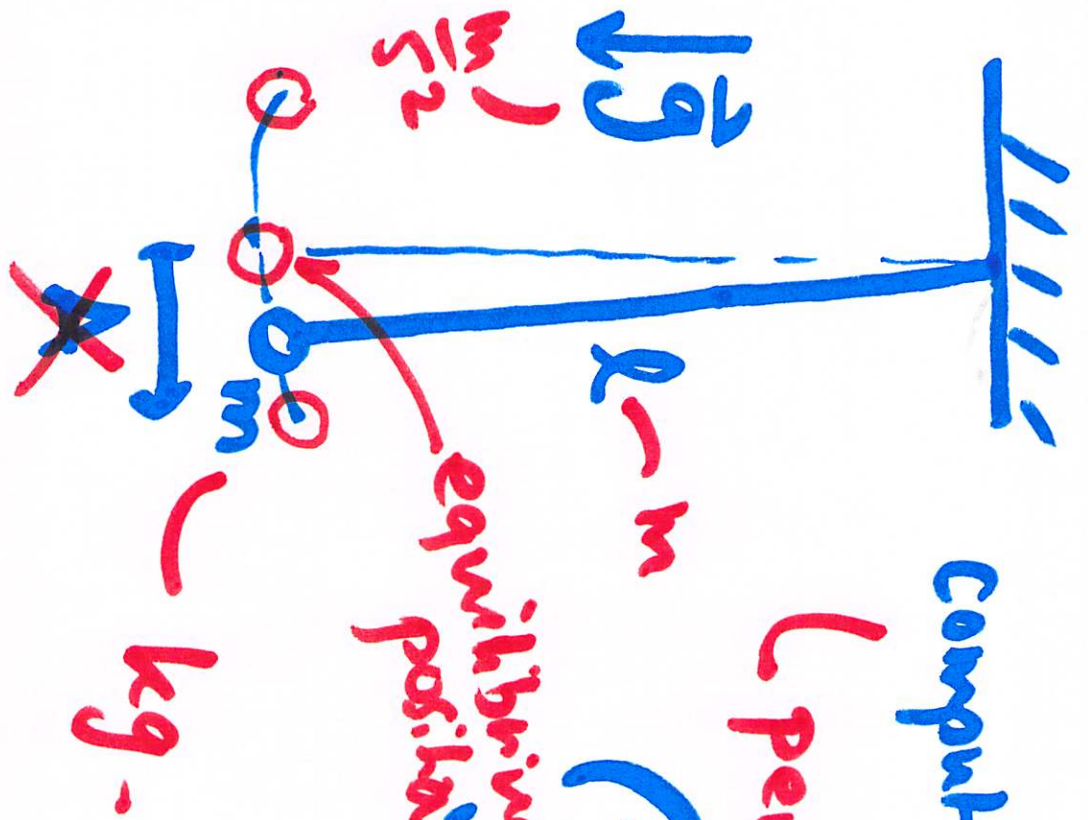
frequency  $\frac{\text{cycles}}{\text{time}}$ ,  $\frac{1}{s}$ , Hz

angular frequency

$\frac{\text{angle}}{\text{time}}$ ,  $\frac{\text{rad}}{s}$ ,  $\omega$  "omega"



$\theta \equiv \frac{s}{r}$  angles in radias.



Compute the period.

Period is a time in seconds.

$$T = 2\pi \sqrt{\frac{I}{g}}$$

equilibrium position

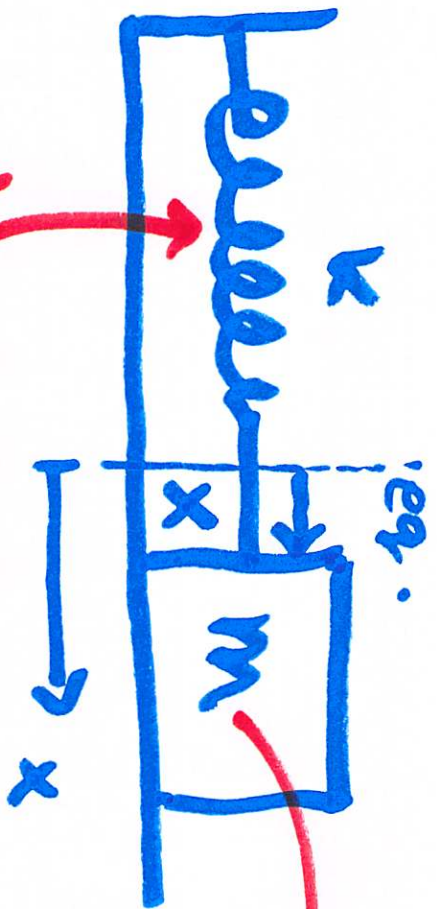
kg.

$$\sqrt{\frac{g}{l}} = \omega$$

rad/s

Angular frequency





← kg.  
← frictionless surface.

obeys "Hooke's Law"  $\vec{F} = -k \vec{x}$

provides "restoring force".  
spring constant.

what is the period?

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

$$\sqrt{\frac{k}{m}} = \omega$$

$$\frac{\text{kg}}{\text{s}^2} = \frac{\text{N}}{\text{m}}$$

