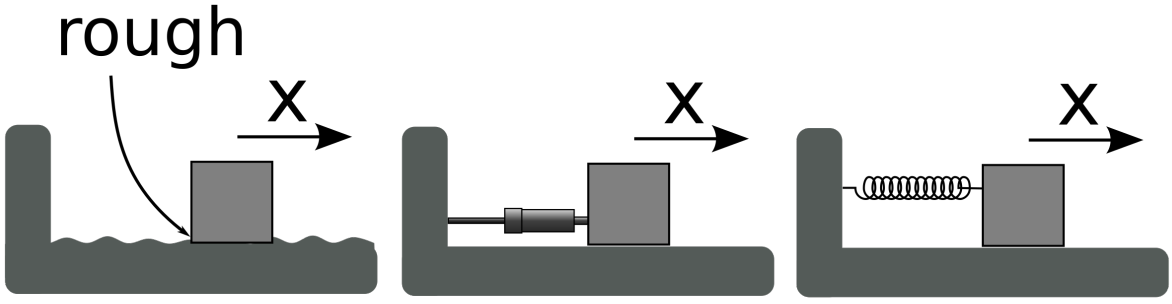


(a) (b) (c)

ⓐ $\ddot{x} = -\mu g \longrightarrow x(t) = -\mu g t^2 + Bt + C$

ⓑ $\ddot{x} = -\frac{b}{m}\dot{x} \rightsquigarrow \frac{dv}{dt} = -bv \quad v = v_0 e^{-b/m\,t}$

ⓒ $\boxed{\ddot{x} = -\frac{k}{m}x}$

↳ $\ddot{x} = -\omega^2 x \rightarrow \omega = \sqrt{\frac{k}{m}} = \sqrt{\frac{4}{1}} = 2\ \text{rad/s}$

$x(t) = A\cos\omega t + B\sin\omega t$

$x(0) = 0 \quad m = A\cdot 1 + B\cdot 0$

$\dot{x}(0) = 10\ \text{m/s} = \omega B \cdot \cos\cdot 0$

$B = \frac{10}{\omega}$

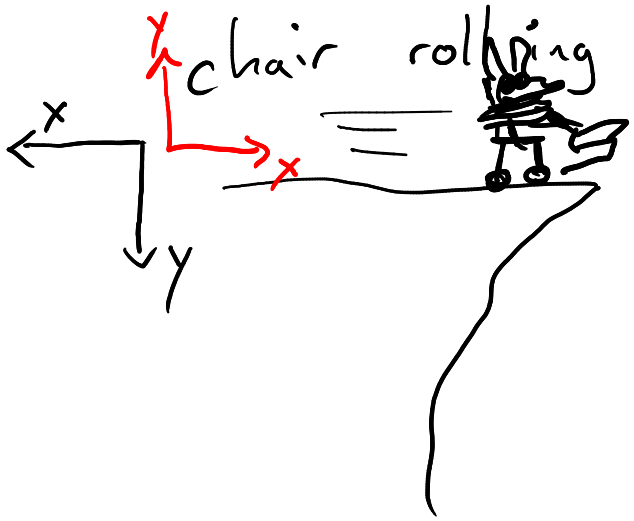
$\boxed{x(t) = \frac{10}{2}\cdot \sin 2t}$

$\frac{d}{dt}(\sin 2t) = \cos 2t$

Quiz-01

- what are important concepts?
- what should we cover in quiz?

1. Free Body Diagram
2. Kinetic Diagram
3. 1 = 2 $\rightleftharpoons$ $\bar{F} = m\bar{a}$



1. coyote wins + stops
2. roadrunner wins + falls