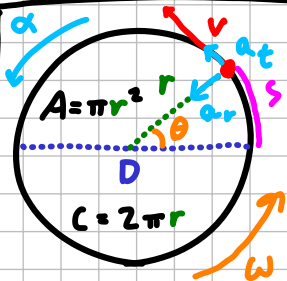


0°	0	1	0
30°	$\frac{\pi}{6}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$
45°	$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$
60°	$\frac{\pi}{3}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$
90°	$\frac{\pi}{2}$	0	1
120°	$\frac{2\pi}{3}$	$-\frac{1}{2}$	$\frac{\sqrt{3}}{2}$
135°	$\frac{3\pi}{4}$	$-\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$
150°	$\frac{5\pi}{6}$	$-\frac{\sqrt{3}}{2}$	$\frac{1}{2}$
180°	π	-1	0
210°	$\frac{7\pi}{6}$	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$
225°	$\frac{5\pi}{4}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$
240°	$\frac{4\pi}{3}$	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$
270°	$\frac{3\pi}{2}$	0	-1
300°	$\frac{5\pi}{3}$	$\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$
315°	$\frac{7\pi}{4}$	$\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$
330°	$\frac{11\pi}{6}$	$\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$
360°	2π	0	1



$s = r\theta$
 $r = D/2$
 $v = r\omega$
 $\omega = \frac{2\pi}{T}$
 $f = 1/T$
 $\theta = \frac{2\pi}{360^\circ} \theta^\circ$ SOH(CAHT)OA
 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

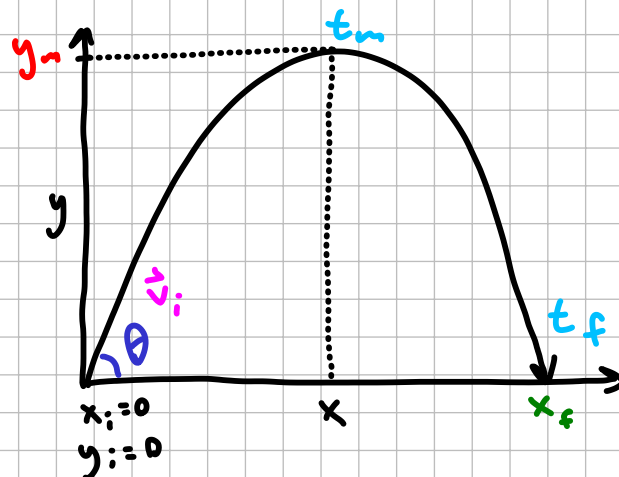
$\tan \theta = \frac{\sin \theta}{\cos \theta}$
 $\sin \theta = \frac{O}{H}$
 $\theta = \sin^{-1}(\frac{O}{H})$

$a_r = \frac{v^2}{r} = r\omega^2$
 $a_t = r\alpha$
 $a_{total} = \sqrt{a_r^2 + a_t^2}$

Probability
 4/24/24

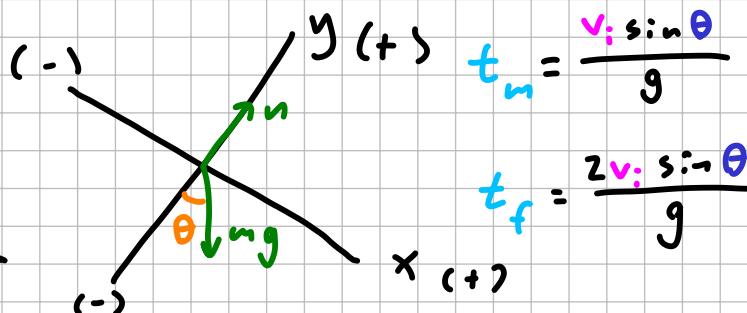
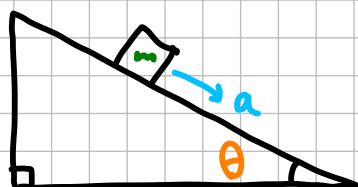
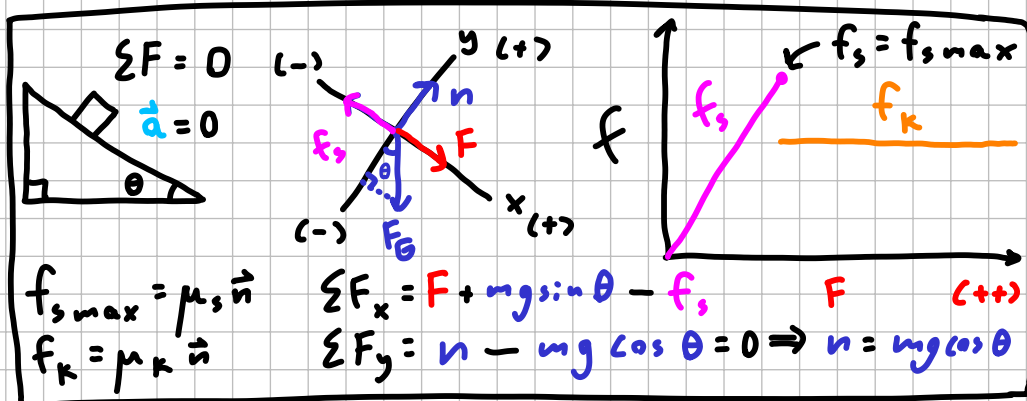
$$\begin{aligned}
 V_f &= V_i + a\Delta t \\
 x_f &= x_i + v_i\Delta t + \frac{1}{2}a\Delta t^2 \\
 v_f^2 &= v_i^2 + 2a\Delta x
 \end{aligned}$$

$$\Sigma \vec{F} = m\vec{a} \begin{cases} \Sigma F_x = ma_x \\ \Sigma F_y = ma_y \end{cases}$$



When tilting axes,
 θ moves to connect
 F_g to the y -axis.

$$x_f = \frac{v_i^2 \sin(2\theta)}{g} \quad y_m = \frac{(v_i \sin \theta)^2}{2g}$$

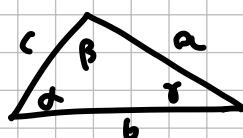



$\Sigma F = 0$
 $a = 0$
 $f_{s,max} = \mu_s n$
 $f_k = \mu_k n$
 $\Sigma F_x = F + mg \sin \theta - f_s$
 $\Sigma F_y = n - mg \cos \theta = 0 \Rightarrow n = mg \cos \theta$

$$\begin{aligned}
 \cos 2\theta &= \cos^2 \theta - \sin^2 \theta \\
 &= 2\cos^2 \theta - 1 \\
 &= 1 - 2\sin^2 \theta \\
 \sin 2\theta &= 2\sin \theta \cos \theta \\
 \sin(-\theta) &= -\sin \theta \\
 \cos(-\theta) &= \cos \theta \\
 \tan(-\theta) &= -\tan \theta
 \end{aligned}$$

$$\begin{aligned}
 \sin^2 \theta + \cos^2 \theta &= 1 \\
 \tan^2 \theta + 1 &= \sec^2 \theta \\
 1 + \cot^2 \theta &= \csc^2 \theta
 \end{aligned}$$

$$\frac{\sin \alpha}{a} = \frac{\sin \beta}{b} = \frac{\sin \gamma}{c}$$



$$\begin{aligned}
 a^2 &= b^2 + c^2 - 2bc \cos \alpha \\
 b^2 &= a^2 + c^2 - 2ac \cos \beta \\
 c^2 &= a^2 + b^2 - 2ab \cos \gamma
 \end{aligned}$$

$$\cot \theta = \frac{\cos \theta}{\sin \theta} \quad \csc \theta = 1/\sin \theta \quad \sec \theta = 1/\cos \theta$$

