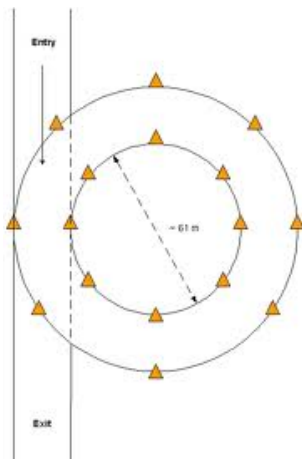
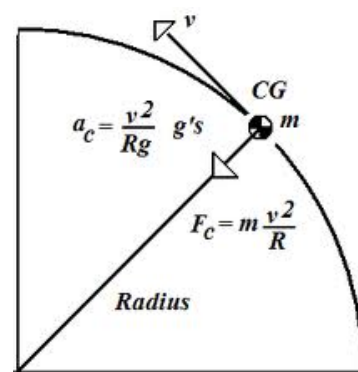


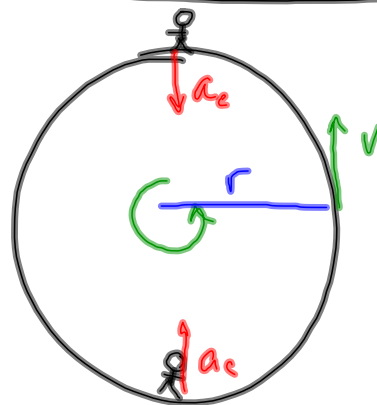
Planning next week's lab

Overview of MP problems

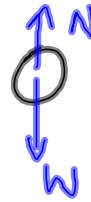
Then two practice AP Problems



FERRIS WHEEL PROBLEM



FBD



BOTTOM

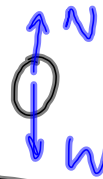
$$\Sigma F_y = ma_y$$

$$N - W = ma_c = m \frac{v^2}{r}$$

$$N - W = \frac{mv^2}{r}$$

$$N = W + \frac{mv^2}{r}$$

FBD



TOP

$$\Sigma F_y = ma_y$$

$$N - W = -\frac{mv^2}{r}$$

$$N = W - \frac{mv^2}{r}$$

CAN N BE NEG? (\downarrow @ TOP)

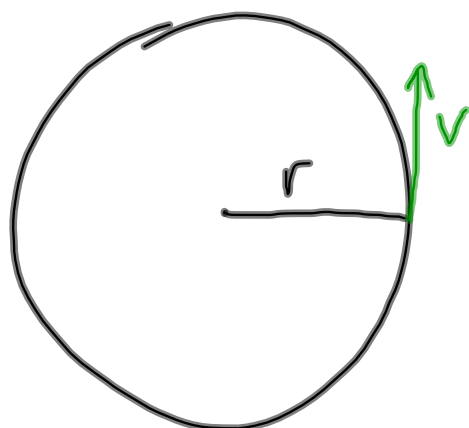
$$N = W - \frac{mv^2}{r}$$

GIVEN: $m = 70 \text{ kg}$
 $r = 7 \text{ m}$
 $v = 20$

$$N = 700 \text{ N} - \frac{70 \cdot 400}{7}$$

$$= 700 \text{ N} - 4000 \text{ N}$$

$$= -3300 \text{ N} \text{ (YOU'D NEED SHOULDER RESTRAINTS)}$$

FINDING VGIVEN: $r = 10\text{ m}$ $T = 180\text{ s}$

"PERIOD"

TIME IT TAKES
FOR ONE REVOLUTION

$$V = \frac{d}{t} = \frac{2\pi r}{T} \approx \frac{2 \cdot 3 \cdot 10\text{ m}}{180\text{ s}} = \frac{60\text{ m}}{180\text{ s}} = 0.33\text{ m/s}$$

TANGENTIAL VELOCITY

PRACTICE AP PROBLEMS

FOR CLASS NOW:

DO 1a, 2a, 2b