

Chapter 5 - Review

Know all you circular motion equations:

$$v = 2\pi r / T$$

$$a_c = v^2/r$$

$$F_c = ma_c = mv^2/r$$

Remember if:

a) on same turning object (table or string) the

> T is the same

> use equation $a_c = 4\pi^2 r / T^2$ R ↑ a ↑

b) at same speed

> v is the same

> use equation $a_c = v^2/r$ R ↑ a ↓

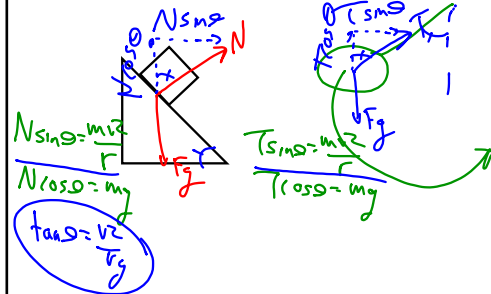
Find force that causes F_c

$$F_c = F_g \rightarrow \overset{\text{on Earth}}{mv^2/r = mg} \text{ OR } \overset{\text{anywhere}}{mv^2/r = Gmm/r^2}$$

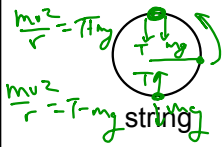
$$F_c = f \rightarrow mv^2/r = \mu mg$$



Banked turns



Vertical Circles



****Bottom ALWAYS has max T or N because gravity points opposite F_c

****if "barely" makes it, or "doesn't leave track" or other such phrase then there is NO T or N so $F_c = F_g = mg$