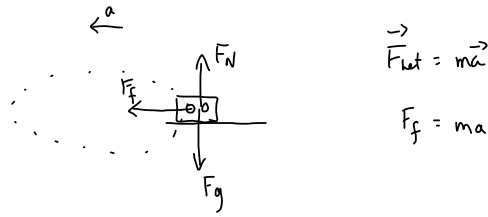


Free Body Diagrams

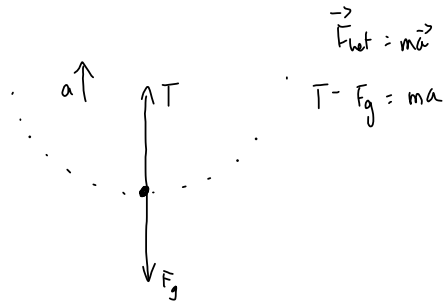
Car going around a circular level track:



$$\vec{F}_{net} = m\vec{a}$$

$$F_f = ma$$

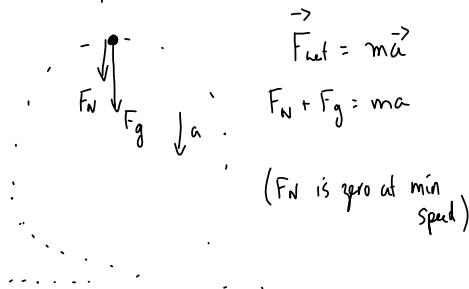
Spiderman at the bottom of his swing:



$$\vec{F}_{net} = m\vec{a}$$

$$T - F_g = ma$$

Roller car at the top of the loop:

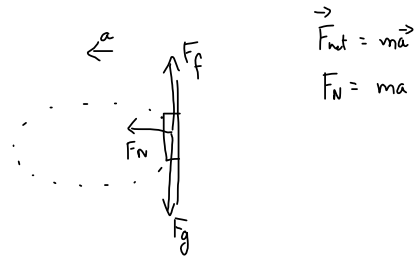


$$\vec{F}_{net} = m\vec{a}$$

$$F_N + F_g = ma$$

(F_N is zero at min speed)

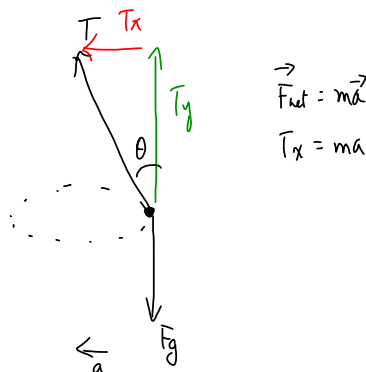
Gavitron



$$\vec{F}_{net} = m\vec{a}$$

$$F_N = ma$$

Toy plane:



$$\vec{F}_{net} = m\vec{a}$$

$$T_x = ma$$