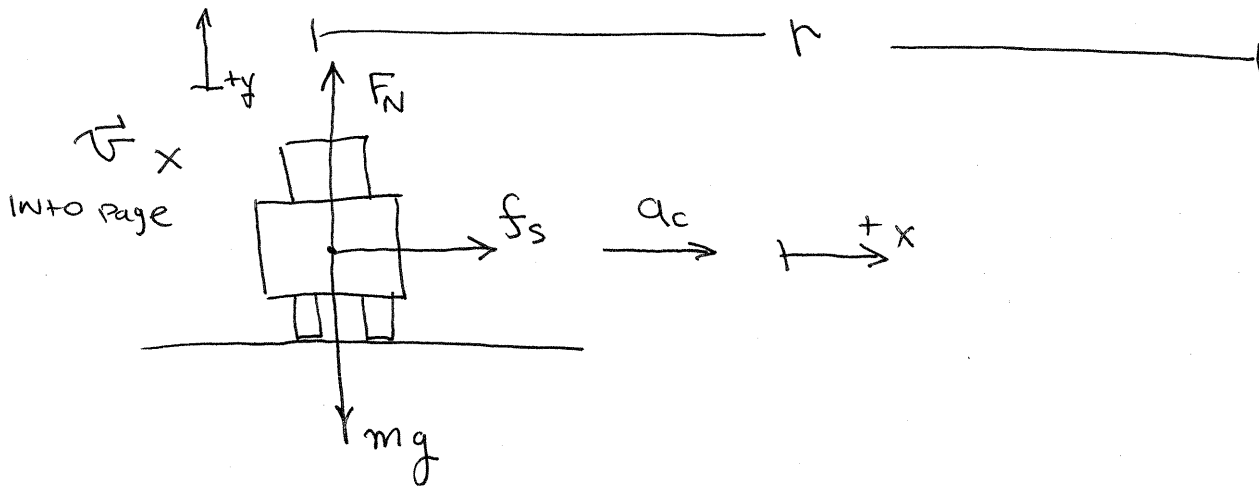


10/10/06

A CAR Rounding
a flat curve



$$\sum F_y = F_N - mg = 0$$

$$\sum F_x = f_s = ma_c \quad a_c = \frac{v^2}{r}$$

$$\Rightarrow f_s = \frac{mv^2}{r}$$

$$F_N = mg \quad f_s = \frac{mv^2}{r}$$

MAXIMUM v before
CAR SKIDS \Rightarrow MAXIMUM
 $f_s = \mu_s F_N$

$$\Rightarrow \mu_s F_N = \frac{mv_{\max}^2}{r}$$

$$\mu_s mg = \frac{mv_{\max}^2}{r}$$

$$v_{\max} = \sqrt{\mu_s r g}$$