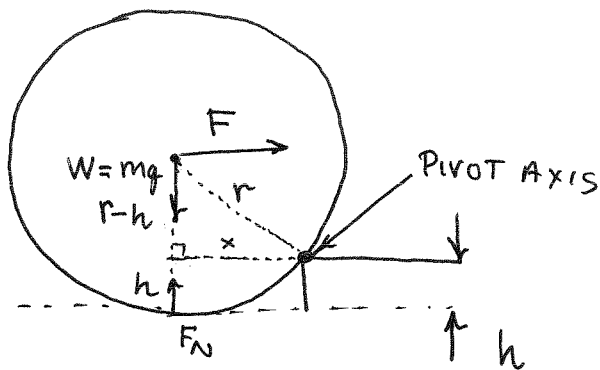


CH 9 #66



$F_N = 0$ as wheel pivots about axis

$$\sum \tau = 0 \quad mgx - F(r-h) = 0 \quad \text{I}$$

$\curvearrowleft \tau_{W=mg}$

USE TRIG/PYTHAGORAS TO get x $r-h$

$$(r-h)^2 + x^2 = r^2 \quad x^2 = r^2 - (r-h)^2$$

$$x = \sqrt{r^2 - (r-h)^2}$$

Solve I For $F \Rightarrow F = \frac{mgx}{(r-h)}$

$$F = \frac{mg \sqrt{r^2 - (r-h)^2}}{(r-h)}$$

$\curvearrowleft W$