

CHAPTER 5: Uniform Circular Motion

$$v = \frac{2\pi R}{T} = 2\pi Rf$$

$$a_c = \frac{v^2}{R}$$

$$F_c = ma_c = m \frac{v^2}{R}$$

Unbanked circular turns:

$$v_{MAX} = \sqrt{\mu_s g R}$$

Banked circular turns:

$$\tan \theta = \frac{v^2}{gR}$$

Orbital speed:

$$v = \sqrt{\frac{GM_E}{R}}$$