

Circular Motion Exercises (1 page; 25/3/20)

Key to difficulty:

* easier

** moderate

*** harder

(1***) Find the height above the earth's surface of a satellite in geostationary orbit (above the equator), using the following data:

radius of earth = 6370 km

mass of earth $\approx 6 \times 10^{24}$ kg

$G \approx 7 \times 10^{-11}$

Gravitational force = $\frac{GMm}{r^2}$

(2***) A bike is being ridden round a circular track of radius 50m, banked at 30° . If the coefficient of friction is 0.3, what is the slowest speed possible?