

Name _____

Period ____ Date ____

UNIT VIII WORKSHEET 5: CIRCULAR MOTION

The National Academy of Science, in order to gather information on deforestation, wishes to place a 500. kg infrared-sensing satellite in a polar orbit around the earth. The radius of the earth is approximately 6.38×10^3 km, and the acceleration of gravity at the orbital altitude of 160 km is very nearly the same as it is at the surface of the earth.

1. Construct a force diagram for the satellite described in the statement above.
2. What is the agent of the centripetal force for the satellite?
3. How much work is done on the satellite during one complete orbit of the earth? Explain your answer.
4. How long would you predict it to take for the satellite to make one complete revolution around the earth?

