UCONN Physics   Worksheet III   Name: _____

Chapter : Kepler's 3rd Law   / 20   Date: _____Period: _____

Directions: Show all work neatly and organized, label all units as you are solving the problems, circle
            final answer(s).

1.   An asteroid revolves around the sun with a mean (average) orbital radius twice that of
        Earth's. Predict the period of the asteroid in Earth years. Ans: 2.8 yrs

2.   From Table 8-1, you can calculate that, on the average, Mars is 1.52 times as far from the sun as
        Earth is from the Sun.   Predict the time required for Mars to circle the sun in Earth days.
        Ans: 684 days

3.   The moon has a period of 27.3 days and has a mean distance of 3.9 x 10^5 km from the center of
        the Earth. Find the period of an artificial satellite that is in orbit 6.7 x 10^3 km from the center of
        Earth. Ans: 0.0615 days or 1.476 hours or 5314 sec

4.   Using the data on the period and radius of revolution of the moon in problem 3, predict what
        the mean distance from Earth's center would be for an artificial satellite that has a period of
        1.00 day. Ans: 43,015 km or 26, 885 miles