**Quiz 7**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What would happen to a satellite in orbit around the earth if the satellite’s mass were to become twice its original mass?
   1. Nothing
   2. It would go faster but stay in the same orbit.
   3. It would go slower but stay in the same orbit.
   4. It’s orbit would degrade and it would crash into the earth
2. What would happen to a satellite in orbit around the earth if the earth’s mass were to become twice its original mass (but the same diameter)?
   1. Nothing
   2. It would go faster but stay in the same orbit.
   3. It would go slower but stay in the same orbit.
   4. It’s orbit would degrade and it would crash into the earth
3. Object A has a larger moment of inertia (I) than object B.
   1. It will require *more* energy to start A rotating than B but *less* to stop A than B.
   2. It will require *less* energy to start A rotating than B but *more* to stop A than B.
   3. It will require *more* energy to both start A rotating and to stop A when it’s rotating than B.
   4. It will require *less* energy to both start A rotating and to stop A when it’s rotating than B.

1. Find the escape speed of the moon. The moon’s mass is 7.36 x 1022 kg, its radius is 1.74 x 106 m.

G = 6.67 x 10-11 Nm2/kg2 PEG = -Gm1m2/r FG = Gm1m2/r2 1 radian = 57.3o

T2 / r3 = 42 / (GM) = K *v* = 2*r* / T KE = ½ *m v*2 *PE = mgh*

*KER = ½ I 2 L = I v/r =  = F r sin *