SPRING-MASS PROBLEMS

1. A 10 kg mass is attached to a spring with a spring constant of k = 100 N/m. If this is set into motion, what is its period and frequency of vibration?

2. If we now remove the 10 kg mass and attach a 5 kg one, what is the new period and frequency of vibration of the system?

3. What mass will give a spring-mass system with a spring constant of 35 N/m a frequency of vibration of 3 Hz?

4. If you use a 1000 kg mass, what spring (k = ?) is needed to give the system a harmonic vibrational frequency of 0.2 Hz?