**HW# 1** -Phys273-Spring 2003

Due Friday, Feb. 7, 2003, by 9am

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## Problem 1.

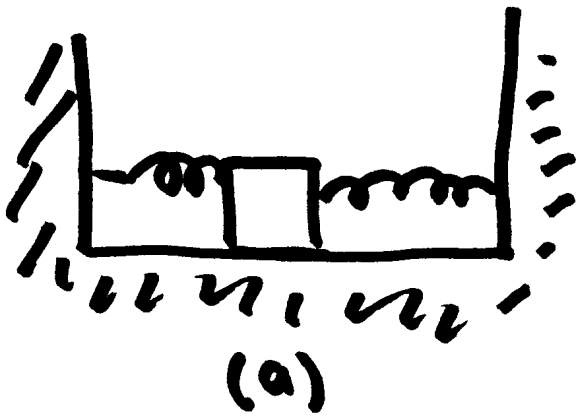
A block of mass 2 Kg hangs from a spring of force constant $k = 800N/m$. The block is pulled 20 cm from equilibrium and released.

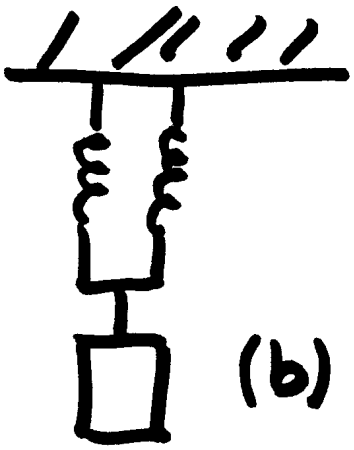
a) What are the amplitude, angular frequency and period of the motion?

b) What are the velocity and the acceleration of the block, when it is 12cm from equilibrium? [*10 points*].

## Problem 2.

Two identical springs each have a spring constant $k = 20N/m$. A 0.3 Kg mass is connected to them, as shown in figure (a) and (b). Find the period of motion for each system. Ignore friction forces [*10 points*].




## Problem # 3

The masses of the figure below slide on an essentially frictionless table. The mass $m_1$ is attached to the spring but not $m_2$. If now $m_1$ and $m_2$ are pushed to the left, so that the spring is compressed a distance $d$, what will be the amplitude of the oscillation of $m_1$, after the spring system is released?