Name: Score: /10

Physics 227: Quiz 12

June 13, 2012

1. A block is attached to the ends of two springs (of the same natural length) of constants K_1 and K_2. The other end of each spring is attached to a wall, so that the springs are parallel to each other. If the block is pulled by a distance d and held there, what is the force on the block from the springs? So what is the "effective" spring constant of the two springs together? Everything is on a frictionless table.

2. I now take a spring of constant K_1 and attach one end to a block and the other end to the other spring of constant K_2. The other end of the K_2 spring attaches to a wall, so that the springs are in "series". If I pull the block by a distance d and hold it there, what is the total force acting on the block? (Hint: both springs need not stretch equally here, but together they must stretch by d. What are the forces on each spring?). In this case, what is the effective spring constant?