

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

Score: \_\_\_\_\_

**Quiz #5**

Monday 15 October 2001 (25 minutes)

**Problem** (Total Points: 40): Block A, having mass  $m_1$ , is released from rest. The block falls a distance  $h$  and strikes a plate B that has mass  $m_2$  and is attached to a vertical spring  $k$ . The collision is such that the block and the plate will move as one piece immediately after they come into contact.

1. (15 points) Determine the velocity of A and B immediately after the collision.
2. (5 points) Is mechanical energy conserved before and after the collision?
3. (20 points) Determine the maximum distance by which A and B will travel after the collision.

