

2) **ABET SO (e)**: A  $20\text{ g}$  bullet is fired horizontally into the  $300\text{ g}$  block which rests on a smooth surface, as shown in the Figure. After the bullet becomes embedded into the block, the block moves to the right  $0.3\text{ m}$  before momentarily coming to rest. Determine the speed  $(v_B)_1$  of the bullet. The spring has a stiffness  $k = 200\text{ N/m}$  and is originally unstretched. Clearly label your coordinate system.

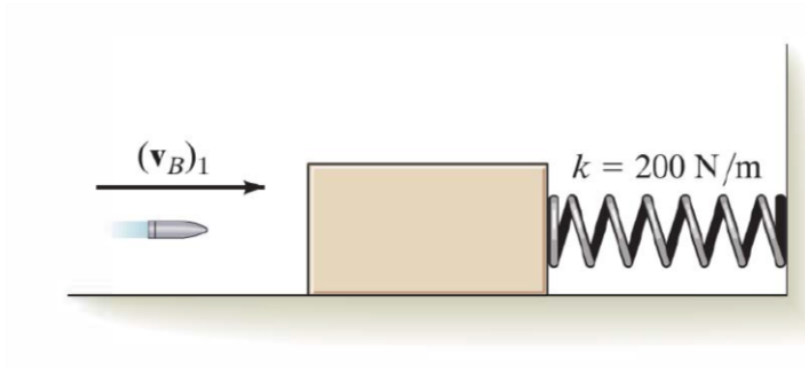


Figure 2: Problem 2

30 marks