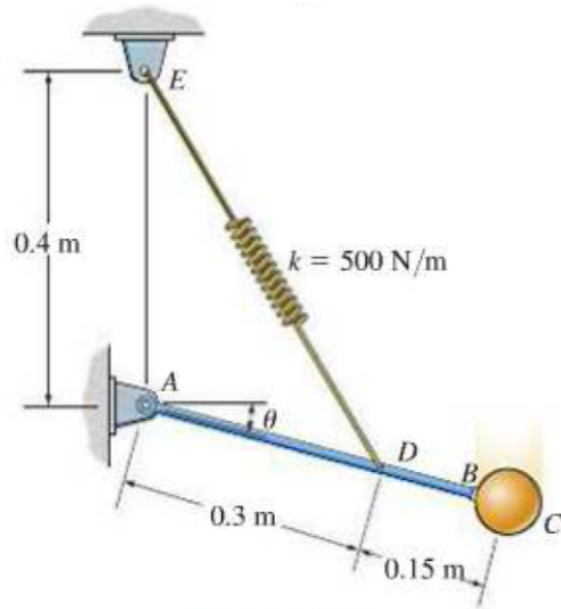


1) **ABET SO (a):** The  $10\text{ kg}$  sphere  $C$  is released from rest when  $\theta = 0^\circ$  and the tension in the spring is  $100\text{ N}$ . Determine the speed of the sphere at the instant  $\theta = 90^\circ$ . Neglect the mass of the rod  $AB$  and the size of the sphere. ( $g = 9.81\text{ m/s}^2$ ). Clearly label your coordinate system.



30 marks