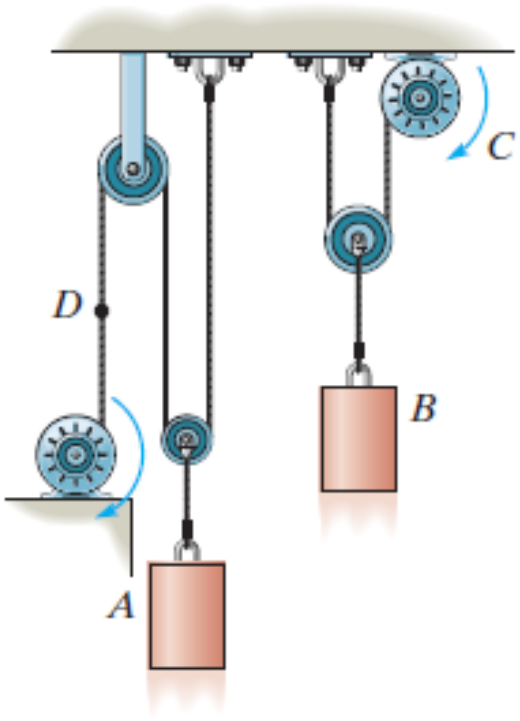
1) The motor draws the cable in at C with a constant velocity of $v_C = 4\ m/s$. The motor draws in the cable at D with a constant acceleration of $a_D = 8\ m/s^2$. If $v_D = 0$ when $t = 0$, determine: (a) the time needed for block A to rise 3 m, and (b) the relative velocity of block A with respect to block B when this occurs.
Clearly label your coordinate system.



30 marks