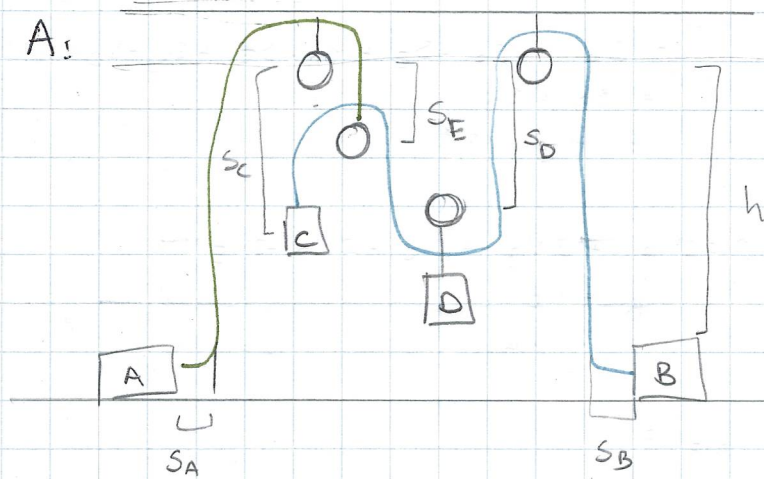


# 20-P-KM-AF-026

Dependent Motion: Intermediate

Q: Ignoring friction  
Given that block B moves at  $[B]$  m/s away, and block C moves downwards with  $[C]$  m/s. What is the velocity of block D and A in m/s?  
(w/ right and up being positive)

It is observed that D moves up with half of  $V_D$



$$l_1^{(\text{blue})} = S_B + h + S_D + (S_D - S_E) + (S_C - S_E)$$

$$l_2^{(\text{green})} = S_A + h + S_E$$

$$0 = V_B + 2V_D + V_C - 2V_E$$

$$0 = V_A + V_E$$

$$V_C = -C$$

$$V_B = B$$

$$V_D = \frac{1}{2}B$$

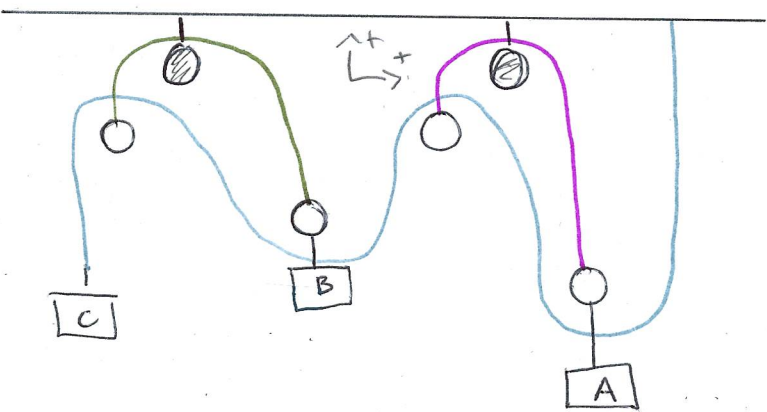
$$0 = B + B + -C - 2V_E$$

$$2V_E = 2B - C$$

$$V_E = \frac{(2B - C)}{2}$$

$$V_A = -\frac{(2B - C)}{2}$$

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(all of these things should be at diff. levels except for the blacked out ones)

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