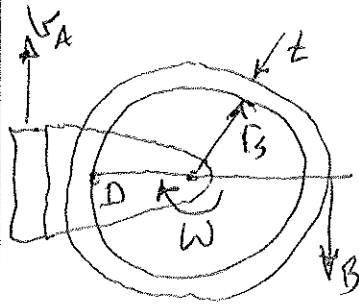


PROB. 15-76



$$v_A = 100 \frac{\text{mm}}{\text{sec}}, \quad v_B = 300 \frac{\text{mm}}{\text{sec}}, \quad t = 20 \text{ mm}$$

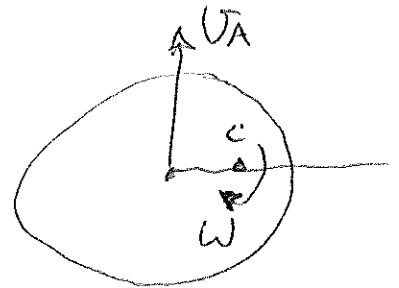
a) FIND C

$$v_B = 300 + 100 \frac{\text{mm}}{\text{sec}} = 400 \frac{\text{mm}}{\text{sec}}$$

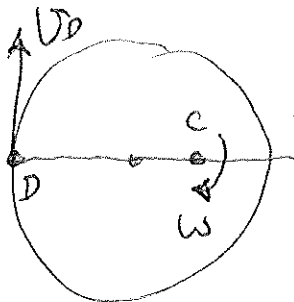
$$\omega = \frac{v_B}{r} = \frac{(400 \frac{\text{mm}}{\text{sec}})}{(80 + 20 \text{ mm})} = 4 \frac{\text{RAD}}{\text{SEC}}$$

$$v_A = v_C \omega, \quad r_C = \frac{v_A}{\omega} = \frac{(100 \frac{\text{mm}}{\text{sec}})}{(4 \frac{\text{RAD}}{\text{SEC}})}$$

$$r_C = 25 \text{ mm}$$



b) FIND  $v_D$



$$v_D = v_{CD} \omega = (80 + 25 \text{ mm}) \left( 4 \frac{\text{RAD}}{\text{SEC}} \right)$$

$$v_D = 420 \frac{\text{mm}}{\text{sec}} \uparrow$$