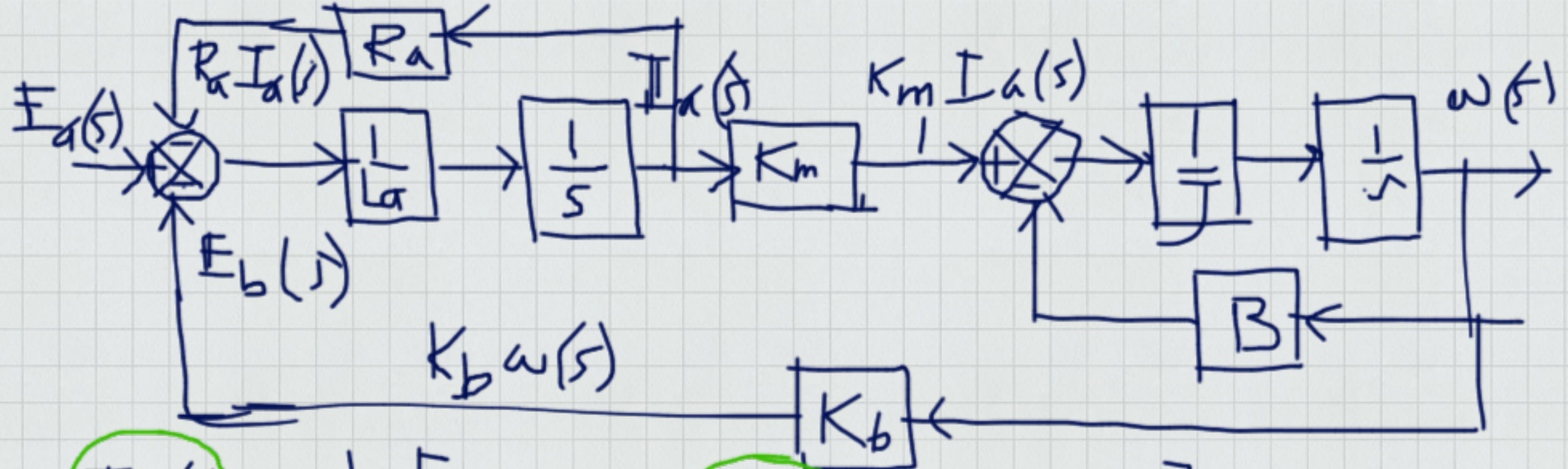




$$I_a(s) = \frac{1}{L_a s} [E_a(s) - R_a I_a(s) - K_b \omega(s)]$$

$$\omega(s) = \frac{1}{J s} [K_m I_a(s) - B \omega(s)]$$

$$J s \omega(s) = K_m I_a(s) - B \omega(s)$$

$$(J s + B) \omega(s) = K_m I_a(s) \rightarrow I_a(s) = \left( \frac{J s + B}{K_m} \right) \omega(s)$$

$$\omega(s) = \left[ \frac{K_m}{L_a J s^2 + (B L_a + R_a J) s + (B K_a + K_b K_m)} \right] E_a(s)$$