7-32) EQUATION (7.51): \( F_2 = \frac{w_s q l \mu_B}{m} \frac{dB}{dz} \)

SPEED \( v = 250 \text{ m/sec} \)

\( t = \frac{1}{v} \), \( \text{TRANSIT TIME} \)

DEFLECTION IN MAGNET

\[ z_1 = \frac{1}{2} a t^2 = \frac{1}{a} \frac{F}{m} t^2 \]

FINAL \( z \)-VELOCITY \( v_2 = a t = \frac{F}{m} b \)

\( \text{EXTRA DEFLECTION} \) \( z_2 = v_2 t = \frac{F}{m} t^2 \)

TOTAL DEFLECTION \( z_{tot} = \frac{z}{a} \left( \frac{F}{m} \right) t^2 \)

\[ z_{tot} = \frac{z}{a} \left( \frac{1}{m} \right) \frac{w_s q l \mu_B}{d} \frac{dB}{dz} \cdot t^2 \]

WITH \( \frac{w_s q l}{a} = \frac{1}{a} \times 2 = 2 \)