

Exercise 10-3

$$\frac{F}{A} = Y \frac{\Delta l}{l_0} \quad \therefore \text{For const. } F, Y, \& l_0 : \Delta l \propto \frac{1}{A}$$

$$\therefore \frac{\Delta l_2}{\Delta l_1} = \frac{A_1}{A_2} \quad \text{or} \quad \Delta l_2 = \Delta l_1 \frac{A_1}{A_2}$$

$$\therefore \Delta l_2 = 0.120 \text{ mm} \times \frac{1}{2} = 0.0600 \text{ mm}$$