- 110. One method is to simply compute the change in length in each edge $(x_0 = 0.200 \text{ m})$ and $y_0 = 0.300 \text{ m}$ from Eq. 19-9 ($\Delta x = 3.6 \times 10^{-5}$ m and $\Delta y = 5.4 \times 10^{-5}$ m) and then compute the area change:
- $A A_0 = (x_0 + \Delta x)(y_0 + \Delta y) x_0 y_0 = 2.16 \times 10^{-5} \text{ m}^2$.
- Another (though related) method uses $\Delta A = 2\alpha A_0 \Delta T$ (valid for $\Delta A/A \ll 1$) which can be derived by
- taking the differential of A = xy and replacing d's with Δ 's.