

6.35 This problem asks us to demonstrate that true strain may also be represented by

$$\varepsilon_T = \ln \left( \frac{A_0}{A_i} \right)$$

Rearrangement of Equation 6.17 leads to

$$\frac{l_i}{l_0} = \frac{A_0}{A_i}$$

Thus, Equation 6.16 takes the form

$$\varepsilon_T = \ln \left( \frac{l_i}{l_0} \right) = \ln \left( \frac{A_0}{A_i} \right)$$

The expression  $\varepsilon_T = \ln \left( \frac{A_0}{A_i} \right)$  is more valid during necking because  $A_i$  is taken as the area of the neck.