

$$\frac{F_f}{F_c} = 1 - \frac{V_m E_m}{E_c}$$

And, finally substitution of Equation 16.10(a) for  $E_c$  into the above equation leads to the desired result as follows:

$$\begin{aligned} \frac{F_f}{F_c} &= 1 - \frac{V_m E_m}{V_m E_m + V_f E_f} \\ &= \frac{V_m E_m + V_f E_f - V_m E_m}{V_m E_m + V_f E_f} \\ &= \frac{V_f E_f}{V_m E_m + V_f E_f} \\ &= \frac{V_f E_f}{(1 - V_f) E_m + V_f E_f} \end{aligned}$$