$$E_e = E_\gamma - E_{\text{ionization}}$$

$$\begin{aligned}(\gamma - 1)m_e c^2 &= 662 \text{ keV} \\ (\gamma - 1)(511 \text{ keV}) &= 662 \text{ keV}\end{aligned}$$

$$E'_\gamma = E_\gamma \left(\frac{m_e c^2}{m_e c^2 + E_\gamma (1 - \cos\theta)} \right)$$

$$\begin{aligned}E'_e &= E_\gamma - E'_\gamma \\ &= E_\gamma \left[1 - \left(\frac{m_e c^2}{m_e c^2 + E_\gamma (1 - \cos\theta)} \right) \right]\end{aligned}$$