Question #89
Key: C

$$\text{LER} = \frac{E(X \wedge d)}{E(X)} = \frac{\theta\left(1 - e^{-d/\theta}\right)}{\theta} = 1 - e^{-d/\theta}$$

Last year $\quad 0.70 = 1 - e^{-d/\theta} \Rightarrow -d = \theta \log 0.30$

Next year: $\quad -d_{new} = \theta \log(1 - \text{LER}_{new})$

Hence $\theta \log\left(1 - \text{LER}_{new}\right) = -d_{new} = \dfrac{4}{3}\theta \log 0.30$

$$\log\left(1 - \text{LER}_{new}\right) = -1.6053$$
$$\left(1 - \text{LER}_{new}\right) = e^{-1.6053} = 0.20$$
$$\text{LER}_{new} = 0.80$$