

Question #253

Key: E

$S_m | Q \sim \text{bin}(m, Q)$ and $Q \sim \text{beta}(1, 99)$. Then

$E(S_m) = E[E(S_m | Q)] = E(mQ) = m \frac{1}{1+99} = 0.01m$. For the mean to be at least 50, m must

be at least 5,000.