

Question #276

Key: B

$$L(\theta) = \left(1 - \frac{\theta}{10}\right)^9 \left(\frac{\theta}{10} - \frac{\theta}{25}\right)^6 \left(\frac{\theta}{25}\right)^5 \propto (10 - \theta)^9 \theta^{11}$$

$$l(\theta) = 9 \ln(10 - \theta) + 11 \ln(\theta)$$

$$l'(\theta) = -\frac{9}{10 - \theta} + \frac{11}{\theta} = 0$$

$$11(10 - \theta) = 9\theta$$

$$110 = 20\theta$$

$$\theta = 110 / 20 = 5.5.$$