Question #236
Key: C

It is given that $n = 4$, $v = 8$, and $Z = 0.4$. Then, $0.4 = \frac{4}{4 + \frac{8}{a}}$ which solves for $a = 4/3$. For the covariance,

$$\begin{aligned} Cov(X_i, X_j) &= E(X_i X_j) - E(X_i)E(X_j) \\ &= E[E(X_i X_j \mid \theta)] - E[E(X_i \mid \theta)]E[E(X_j \mid \theta)] \\ &= E[\mu(\theta)^2] - E[\mu(\theta)]^2 = Var[\mu(\theta)] = a = 4/3. \end{aligned}$$