

Question #181

Key B

$$\mu(\lambda, \theta) = E(S | \lambda, \theta) = \lambda\theta,$$

$$v(\lambda, \theta) = \text{Var}(S | \lambda, \theta) = \lambda 2\theta^2,$$

$$v = \text{EVPV} = E(\lambda 2\theta^2) = 1(2)(1+1) = 4,$$

$$a = \text{VHM} = \text{Var}(\lambda\theta) = E(\lambda^2)E(\theta^2) - [E(\lambda)E(\theta)]^2 = 2(2) - 1 = 3,$$

$$k = v/a = 4/3.$$