

Question #20

Key: D

There are four possible samples, (5,5), (5,9), (9,5), and (9,9). For each, the estimator g must be calculated. The values are 0, 4, 4, and 0 respectively. Assuming a population in which the values 5 and 9 each occur with probability .5, the population variance is

$.5(5 - 7)^2 + .5(9 - 7)^2 = 4$. The mean square error is approximated as

$.25[(0 - 4)^2 + (4 - 4)^2 + (4 - 4)^2 + (0 - 4)^2] = 8$.