

Question #197**Key: C**

$$\hat{v} = EVPV = \bar{x} = \frac{30 + 30 + 12 + 4}{100} = 0.76.$$

$$\hat{a} = VHM = \frac{50(0 - 0.76)^2 + 30(1 - 0.76)^2 + 15(2 - 0.76)^2 + 4(3 - 0.76)^2 + 1(4 - 0.76)^2}{99} - 0.76$$
$$= 0.090909,$$

$$\hat{k} = \frac{0.76}{0.090909} = 8.36, \quad \hat{Z} = \frac{1}{1 + 8.36} = 0.10684,$$

$$P = 0.10684(1) + 0.89316(0.76) = 0.78564.$$

The above analysis was based on the distribution of total claims for two years. Thus 0.78564 is the expected number of claims for the next two years. For the next one year the expected number is $0.78564/2 = 0.39282$.