

Question #151

Key: C

$$E(N | 1) = 5, E(N | 2) = 8(0.55) = 4.4, \mu = 0.5(5) + 0.5(4.4) = 4.7$$

$$Var(N | 1) = 5, Var(N | 2) = 8(0.55)(0.45) = 1.98, v = 0.5(5) + 0.5(1.98) = 3.49$$

$$a = 0.5(5)^2 + 0.5(4.4)^2 - 4.7^2 = 0.09, k = 3.49 / 0.09 = 38.7778$$

$$Z = \frac{3}{3 + 38.7778} = 0.0718, 4.6019 = 0.0718 \frac{7+r}{3} + 0.9282(4.7)$$

The solution is $r = 3$.