

9.5.2

(a) K_{100} is Binomial $(100, \frac{3}{4})$

$$E[K_{100}] = 100\left(\frac{3}{4}\right) = 75$$

$$(b) \text{Var}[K_{100}] = 100\left(\frac{3}{4}\right)\left(\frac{1}{4}\right) = 18.75$$

$$\sigma_{K_{100}} = \sqrt{18.75} = 4.3301$$

$$(c) z = \frac{18.75}{4.3301} \approx -13.1636$$

$$P[z > -13.1636] \approx 1$$

$$(d) z_2 = \frac{24 - 75}{4.3301} = -11.7780$$

$$P[K < -11.7780] \approx 0$$

$$z_1 = \frac{16 - 75}{4.3301} = -13.6256$$

$$P[K < -13.6256] \approx 0$$

$$P[16 \leq K_{100} \leq 24] \approx 0$$

