

解答

1. (1) $\bar{x} = 7.18$

(2) $u^2 = 13.55$

2. (1) $10.95 \leq \mu \leq 14.25$

(2) $8.31 \leq \mu \leq 9.69$

(3) $7.41 \leq \mu \leq 18.59$

3. $0.232 \leq p \leq 0.368$

4. $0.595 \leq p \leq 0.745$

解説

1. (1) $\bar{x} = \frac{6.7 + 3.8 + 11.6 + 5.4 + 2.9 + 9.8 + 6.3 + 13.6 + 4.5}{9} = 7.18$

(2) $\bar{x}^2 = 63.6$

$u^2 = \frac{9}{8}(63.6 - 7.18^2) = 13.55$

2. (1) $t_{12}(0.005) = 3.055$

$\bar{x} - t_{12}(0.005)\sqrt{\frac{u^2}{13}} = 10.95, \quad \bar{x} + t_{12}(0.005)\sqrt{\frac{u^2}{13}} = 14.25$

(2) $t_{14}(0.005) = 2.977$

$\bar{x} - t_{14}(0.005)\sqrt{\frac{u^2}{15}} = 8.31, \quad \bar{x} + t_{14}(0.005)\sqrt{\frac{u^2}{15}} = 9.69$

(3) $t_8(0.005) = 3.355$

$\bar{x} - t_8(0.005)\sqrt{\frac{u^2}{9}} = 7.41, \quad \bar{x} + t_8(0.005)\sqrt{\frac{u^2}{9}} = 18.59$

3. $z_{0.005} = 2.576$

$\hat{p} - z_{0.005}\sqrt{\frac{\hat{p}(1-\hat{p})}{300}} = 0.232, \quad \hat{p} + z_{0.005}\sqrt{\frac{\hat{p}(1-\hat{p})}{300}} = 0.368$

4. $\hat{p} = 0.67, z_{0.025} = 1.960$

$\hat{p} - z_{0.025}\sqrt{\frac{\hat{p}(1-\hat{p})}{150}} = 0.595, \quad \hat{p} + z_{0.025}\sqrt{\frac{\hat{p}(1-\hat{p})}{150}} = 0.745$