

STAT 2507 EXAM REVIEW QUESTIONS

1. (A) 0.54 (B) 0.26 (C) 0.06 (D) 0.86 (E) 0.10 (F) 0.675 The events are neither independent nor mutually exclusive.

2. (i) $H_a : \mu_1 \neq \mu_2$, $t_0 = 2.2326$, $0.02 < \text{p-value} < 0.05$, reject H_0 (ii) $H_a : \mu_1 \neq \mu_2$, $t_0 = 2.2326$, critical value = 1.734, reject H_0 (iii) $H_a : \mu_1 \neq \mu_2$, (0.18, 5.82), reject H_0 .

3. (A)

\bar{x}	1	4/3	5/3	2
$P(\bar{X} = \bar{x})$	0.027	0.189	0.441	0.343

(B) $\bar{X} \stackrel{approx}{\sim} N(1.7, 0.21 / 40)$ (C) 0.0838

4. (A) 0.3935 (B) 0.7606 (C) 0.9251

5. (A) 757 (B) 1037

6. (A) 0.3233 (B) 0.1353

7. (A) (139.7, 160.3) (B) 107

8. $H_a : \mu \neq 2.52$, $t_0 = 1.6599$, $0.10 < \text{p-value} < 0.20$ or critical values = $-2.977, +2.977$, fail to reject H_0 .

9. (A) 0.9599 (B) 0.5987 (C) 0.3612 (D) 0.3763 (E) 7.392 months (F) $\mu = 30.608$ (G) $\sigma = 6.0189$ (H) 0.3881 (I) 0.0418

10. (A) SRS, pulmonary compliance is normally distributed. (B) $\bar{x} = 209.09$, $s^2 = 866.4832$ (C) (188.03, 230.15)

11. (i) $H_a : \mu_1 - \mu_2 > 500$, $t_0 = 0.7746$, p-value > 0.10 , fail to reject H_0

(ii) $H_a : \mu_1 - \mu_2 > 500$, $t_0 = 0.7746$, critical value = 1.701, fail to reject H_0

12. (A) 0.04094 (B) 0.0239

13. $\hat{y} = 11.03 + 24.863x$, $\hat{y}|_{x=3} = 11.03 + 24.863(3) = 85.619$