

7. (a)  $P\{X > 70.3\} = P\{Z > (70.3 - 69)/3\} = P\{Z > 0.43\} = .666$

(b) Find C that satisfies  $P\{X < C\} = 0.02$

$$P\{Z < (C - 69)/3\} = 0.02 = P\{Z < -2.055\}$$

$$C = 69 + 3 \text{ times } (-2.055) = 62.835$$

(c) Find C such that  $P\{X > C\} = .9 = P\{Z > -1.28\}$

$$C = 69 + 3 \text{ times } (-1.28) = 65.16$$

8. sum of squares = 20 times (n-1) = 20(5-1) = 80

chi-square test statistic = 80/15 = 5.333

P-value =  $P\{\text{chi-square (d.f. = 4)} > 5.333\} > .20$

P-value is bigger than alpha level (set at 0.1)

Accept null hypothesis.

6. (a) ??? = .5

(b). sum of squares = 3 ;

use chi-square with d.f. = 2

confidence interval is between 3/7.378 and 3/.051

(c) . (There is an error at the end : it should be at 5% level , not 95% level) P-value =  $2 P(t\text{-random variable (df=2)} > (3 - 2.5)/.24) = 2 P(t\text{ random variable} > 2.08) > 2 (.05) = .10$  . Accept the null hypothesis.

The standard error of the slope estimate (= .24) should be given.

1. 4/9

2. chi-square statistics = 14.9, P-value about .005. Reject null hypothesis.

3. (a) .977

(b) 16.375

(c) different; same

4. (a) 43

(b)  $13 / \sqrt{13 \text{ times } 17} = \sqrt{13/17}$  (note : sqrt = square root)

5. (a) wrong (b) wrong (c) yes (d) yes (e) wrong (f)

$$P(Z < 1.28 \text{ times } 0.6) = P(Z < .768) = .779$$