

Statistics 23, Section 1, Homework # 12

Due: Tuesday, November 30, 1999

B16: For each of the problems:

- a. A TV ad claims that 40% of people prefer Brand X. But 7 out of 10 randomly chosen people prefer Brand X. Should we dispute the claim?
- b. 80% of the sheet metal we buy from supplier A meets our specs. Supplier B sends us 12 shipments and 11 of them meet our spec. Is it safe to say quality of B is higher?
- c. Same as (b) except: is it safe to say quality of B is lower?
- d. Same as (b) except: 7 out of 12 meet our specs.

Do:

- i. Define the population proportion  $p$  of interest.
- ii. Formulate hypotheses  $H_+$ ,  $H_0$ ,  $H_-$  in terms of  $p$ .
- iii. Give the p-value for  $H_+$ . (0.0548, 0.275, 0.931, 0.981)
- iv. Give a “yes-no” answer. ((a) don’t dispute (b) not safe to say higher (c) not safe to say lower (d) conclude quality is lower).
- v. Give a “gray level” answer. ((a) moderate evidence against claim (b) no strong evidence for higher (c) no evidence for lower (d) strong evidence for lower)

8.58 a “yes-no” & “gray level”, (p-val = 0.0906)

8.60 ignore SPSS and give p-value and interpret “yes-no” and “gray level” (0.231)

8.15 “yes-no” & “gray level”, (p-val =  $8.00 \times 10^{-6}$ )

8.17 a “yes-no” & “gray level”, (p-val  $\approx 0$ )

B17 Give Z – scores for earlier HWs:

B16 (iii) (1.61, 0.650, 1.37, -2.24)

8.58 a (1.33)

8.60 (-0.737)

8.15 (-4.31)

8.17 a (7.02)

8.64 b, c, d, Z-score and p-value, “yes-no” and “gray level” ( $z_0 = -4.83$ , p-val =  $6.80 \times 10^{-7}$ ,  
 $z_0 = -0.47$ , p-val = 0.319)