

§9.1 #4, 8, 15, 10, 18

- #4 a) A Hypothesis Test
 b) p-value and CV Method will give the same result ✓
 c) Use a $CL = .90$ to get the same CV for the confidence interval and the hypothesis test. ✓

d) Salks Vaccine decreases the proportion of children that get polio.

TISE that the prop who get polio is less in the group that got the vaccine. ✓

#15 a) $H_0: P_1 = P_2$ $H_1: P_1 \neq P_2$ ✓
 $z = 0.57$ $PV = 0.5720$ $CV = \pm 1.96$

Reject H_0 TISE ✓

b) $-0.0798 < P_1 - P_2 < 0.149$ ✓

TISE ✓

c) Einachua doesn't have an effect

#8 BK $x_1 = 264$ $n_1 = 54 + 264 = 318$
 McD $x_2 = 329$ $n_2 = 329 + 33 = 362$ $\alpha = .05$

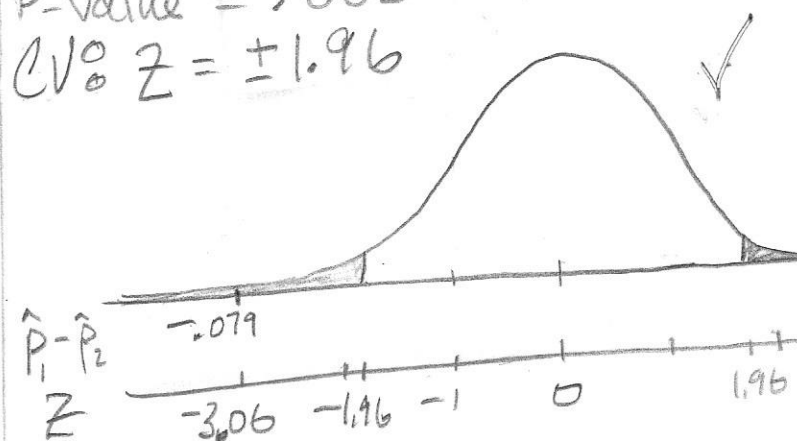
a) claim: $P_1 = P_2$ $H_0: P_1 = P_2$ $H_1: P_1 \neq P_2$

PE: $\hat{P}_1 - \hat{P}_2 = \frac{264}{318} - \frac{329}{362} = \frac{54}{318} - \frac{33}{362}$ (May also use)
 $= .830 - .909 = -.07865$

TS: $z = -3.06$ ← opp sign is okay

P-value = .0022

CV: $z = \pm 1.96$



Reject H_0

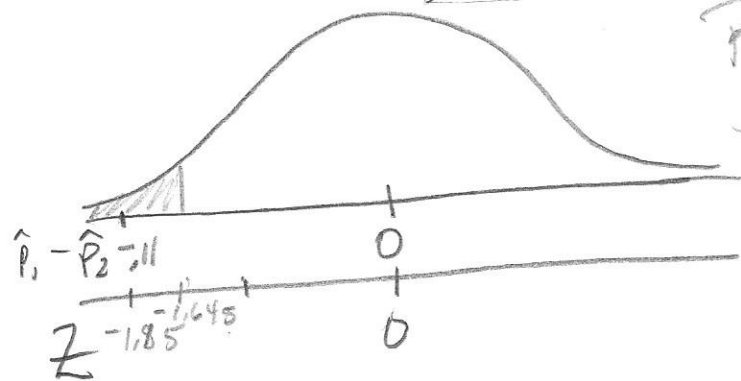
TISE to reject that the accuracy rates are the same

b) 95% CI $-.129 < P_1 - P_2 < -.0278$
 0 is Not in interval so there is a sign. difference. BK accuracy is between 2.8% & 12.9% worse than McD. ✓

c) McD is better at accuracy 91% vs BK at 83%. ✓

Q.1 #18 One bill $X_1 = 60$ $n_1 = 75$ $\alpha = .05$ claim $p_1 < p_2$
 Small bills $X_2 = 68$ $n_2 = 75$

a) $H_0: p_1 = p_2$ $PE: \hat{p}_1 - \hat{p}_2 = \frac{60}{75} - \frac{68}{75} = .8 - .9067 = -.1067$
 $H_1: p_1 < p_2$ $TS: Z = -1.85$ $p\text{-value} = .0324$ $CV: Z^* = -1.645$



Reject H_0 , TISE to Support that the women given the smaller bills were more likely to spend the money.

b) 90% CI $-0.201 < p_1 - p_2 < -0.0127$
 Zero is NOT in interval $\Rightarrow$ there is a significant difference
 The proportion getting one 100 Yuan Bill are between .01 and .20 less likely to spend the money.

c) Yes, $p\text{-value} = .0324 > .01 = \alpha$ so if alpha is smaller we no longer have significant sample data.