

Math 110 Final Exam Review

Sample 1 DARE $n_1 = 288$ $x_1 = 141$ $\hat{p}_1 = \frac{141}{288} = .490$	Sample 2 No DARE $n_2 = 335$ $x_2 = 181$ $\hat{p}_2 = \frac{181}{335} = 0.540$	#44 Marijuana Use (yes/no) → categorical #45 Two proportions #46 Criteria are met.
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$\rightarrow 141 \text{ successes} \geq 10$
 $288 - 141 = 147 \text{ fails} \geq 10$

$\rightarrow 181 \text{ successes} \geq 10$
 $335 - 181 = 154 \text{ fails} \geq 10$

#47 $H_0: p_1 = p_2, H_1: p_1 < p_2$

#48 $\hat{p}_1 = .490, \hat{p}_2 = .540, \bar{p} = \frac{x_1 + x_2}{n_1 + n_2} = \frac{141 + 181}{288 + 335} \approx .517$

$\bar{q} = 1 - \bar{p} = .483$

#49 TS: $z = \frac{\hat{p}_1 - \hat{p}_2 - (p_1 - p_2)}{\sqrt{\frac{\bar{p}\bar{q}}{n_1} + \frac{\bar{p}\bar{q}}{n_2}}} = \frac{.49 - .54 - 0}{\sqrt{\frac{.517 \times .483}{288} + \frac{.517 \times .483}{335}}} = -1.25$

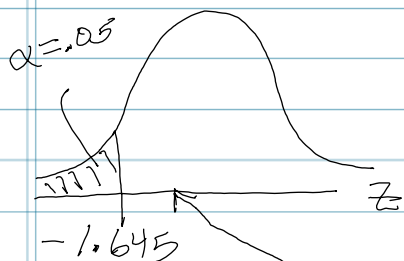


Table A2
 $\downarrow$
 df
 $\downarrow$
 $large(z)$
 $\downarrow$
 1.645

Fail to Reject H_0

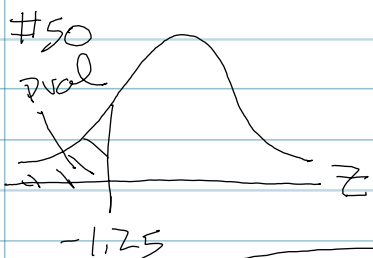


Table A1 - Z-dist p-val's

$z \rightarrow .05$
 $\downarrow$
 $-1.2 \rightarrow .1056$

$p\text{-val} = .1056$

#52 Fail to reject H_0
 Don't support H_1

#53 The data do not support the claim that the proportion of Seniors who have used Marijuana is lower for DARE kids.