

Hypothesis Testing / Part II
 Difference of the ^{Proportion} Means (μ)
 - when $n \geq 30$

May 5-8:16 AM

$H_0: \mu_1 = \mu_2$ $\mu_1 \geq \mu_2$ $\mu_1 \leq \mu_2$
 $H_a: \mu_1 \neq \mu_2$ $\mu_1 < \mu_2$ $\mu_1 > \mu_2$
 (in calculator, use sign of H_a)
 two-tailed test left-tailed test right-tailed test

May 5-8:24 AM

When we reject H_0 , then we can support H_a .
 $P_{\text{value}} \leq \alpha$ $\alpha =$ level of significance
Reject H_0 / Support H_a (given in the problem)
 $P_{\text{value}} > \alpha$
 Fail to reject H_0
 Fail to support H_a

May 5-8:28 AM

8. $H_0: p_1 = p_2$ (reject H_0)
 $H_a: p_1 \neq p_2$ (support H_a)
 $\alpha = .10$

$P_{\text{value}} \alpha$
 $.0041 < .10 \therefore$ Reject H_0 , Support H_a
 There is sufficient evidence at the 10% level of sig to reject the claim that the 2 groups suffer the same bouts of depression.

Apr 27-10:08 AM

17. ^{boys} $n_1 = 700$ ^{girls} $n_2 = 500$
 $X_1 = (.04)(700)$ $X_2 = (.07)(500)$
 $H_0: p_1 \geq p_2$ left-tailed
 $H_a: p_1 < p_2$

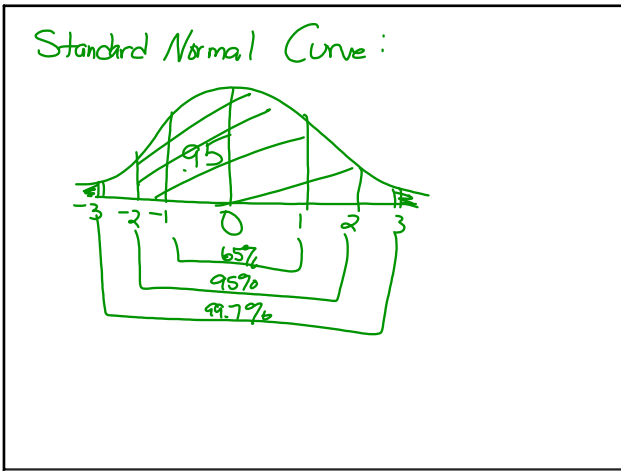
$P_{\text{value}} \alpha$
 $.0108 > .01 \therefore$ Fail to reject H_0
 Fail to support H_a
 There is insufficient evidence at the 1% level of sig to support the claim that girls who watch less than 1 hr of TV is greater than boys.

Apr 27-10:13 AM

Support a claim - different - H_a
 $H_0: \mu_1 = \mu_2$
 $H_a: \mu_1 \neq \mu_2$
 two-tailed test
 $\alpha = .10$ (10% level of significance)
 $n \geq 30 \therefore$ normal (distribution)
 $z = \pm 2.786$

$P_{\text{value}} = .0053$
 $.0053 < .10 \therefore$ Reject H_0
 There is sufficient evidence at the 10% level of significance to support the claim that the mean braking distance is different for both types of tires.

May 5-8:33 AM



May 5-8:45 AM

* Want to support $\Rightarrow H_a$
 $H_0: \mu_C \leq \mu_D$
 $H_a: \mu_C > \mu_D$

right-tailed
 $\alpha = .10$
 $n \geq 30 \therefore$ normal (z dist.)

$P_{value} = 0$
 $P_{value} < \alpha \therefore$ Reject H_0
 $0 < .10$

There is sufficient evidence at the 10% level of significance to support the claim that the mean braking distance for type C tires is greater than type D tires.

May 5-8:48 AM