

Final Review #3

- Conf Int, p**
(0.605, 0.795)
- Hyp Test, Independence**
Ho: Political affiliation is independent of income level
H₁: Political affiliation is dependent on income level
 $\alpha = 0.05$
Independence Test
 $\chi^2 = 76.35$, $p\text{-value} < 0.0001$
Reject H₀.
There is sufficient evidence to conclude that political affiliation is dependent on income level.
- Hyp Test, Goodness of Fit**
Ho: $p_1 = p_2 = p_3 = 1/3$ H₁: At least 1 proportion is different than claimed
 $\alpha = 0.05$
Two Proportion Test
E for each group is $240(1/3) = 80$
 $\chi^2 = 10.43$, $p\text{-value} = 0.0054$
Reject H₀.
There is sufficient evidence to conclude that at least 1 proportion is different than claimed.
- Conf Int, μ**
(10.35, 15.40)
- Hyp Test, Two Mean**
#1: Only Children
Ho: $\mu_1 = \mu_2$ H₁: $\mu_1 \neq \mu_2$
 $\alpha = 0.01$
Two Mean Test
 $t = -3.28$, $p\text{-value} = 0.0015$
Reject H₀.
There is sufficient evidence to conclude that the two means are not equal.
- Hyp Test, One Proportion**
Ho: $p = 0.6$ H₁: $p > 0.6$
 $\alpha = 0.05$
One Proportion Test
 $z = 10.39$, $p\text{-value} < 0.0001$
Reject H₀.
There is sufficient evidence to conclude that more than 60% of all retired persons prefer living in an apartment to living in a one-family home.

7. **Hyp Test, μ**

$$H_0: \mu = 14 \quad H_1: \mu \neq 14$$

$$\alpha = 0.05$$

One Mean Test (t)

$$t = 5.66, \quad p\text{-value} < 0.0048$$

Reject H_0 .

There is sufficient evidence to conclude that the mean tar content for their cigarettes is different than 14.0 mg.

8. **Hyp Test, 2 Proportion**

#1: Getting Off Plane

$$H_0: p_1 = p_2 \quad H_1: p_1 \neq p_2$$

$$\alpha = 0.05$$

Two Proportion Test

$$z = 2.88, \quad p\text{-value} = 0.004$$

Reject H_0 .

There is sufficient evidence to conclude that the two proportions are not equal.

9. **Hyp Test, Paired Difference**

d = Bat A – Bat B

$$H_0: \mu_d = 0 \quad H_1: \mu_d > 0$$

$$\alpha = 0.05$$

Paired Difference Test

$$t = 1.84, \quad p\text{-value} = 0.0413$$

Reject H_0 .

There is sufficient evidence to conclude that Bat A hits more home runs than Bat B.

10. **Hyp Test, ANOVA**

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \quad H_1: \text{At least 1 mean is different than the others.}$$

$$\alpha = 0.05$$

ANOVA

$$F = 13.85, \quad p\text{-value} = 0.0001$$

Reject H_0 .

There is sufficient evidence to conclude that at least 1 mean is different than the others.