# Lab 15: Chapter 11

1. According to a June 2009 report (http://www.alertnet.org/thenews/newsdesk/L31011082.htm), 68% of people with "green" jobs in North America felt that they had job security, whereas 60% of people with green jobs in the United Kingdom felt that they had job security. Suppose that these results were based on samples of 305 people with green jobs from North America and 280 people with green jobs from the United Kingdom

   (a)  Use the given information to estimate the difference between the two population proportions.

   (a) ——————

   (b)  Verify that the conditions needed in order for the margin of error formula to be appropriate are met.

   (c)  Compute/find the value of the margin of error.

   (c) ——————

   (d)  Interpret the meaning of the margin of error in the context of this problem.

   (e)  Construct a 95% confidence interval for the difference between the two population proportions

   (e) ——————

   (f)  <u>Communicate the Result</u>: Interpret the confidence interval.

   (g)  <u>Communicate the Result</u>: Interpret the confidence *level*.

2. A study in the July 7, 2009, issue of USA TODAY stated that the 401(k) participation rate among U.S. employees of Asian heritage is 76%, whereas the participation rate among U.S. employees of Hispanic heritage is 66%. Suppose that these results were based on random samples of 100 U.S. employees from each group.

(a)   Use the given information to estimate the difference between the two population proportions

(a) ——————————

(b)   Verify that the conditions needed in order for the margin of error formula to be appropriate are met.

(c)   Compute/find the value of the margin of error. (Use a 99% confidence level)

(c) ——————————

(d)   Interpret the meaning of the margin of error in the context of this problem.

(e)   Construct a 99% confidence interval for the the difference between the two population proportions

(e) ——————————

(f)   <u>Communicate the Result</u>: Interpret the confidence interval.

(g)   <u>Communicate the Result</u>: Interpret the confidence *level.*

3. "Smartest People Often Dumbest About Sunburns" is the headline of an article that appeared in the San Luis Obispo Tribune (July 19, 2006). The article states that "those with a college degree reported a higher incidence of sunburn than those without a high school degree—43% versus 25%." Suppose that these percentages were based on independent random samples of size 200 from each of the two groups of interest (college graduates and those without a high school degree).

   (a)  Use the given information to estimate the difference between the two population proportions.

   $$(a) \ \underline{\hspace{2cm}}$$

   (b)  Verify that the conditions needed in order for the margin of error formula to be appropriate are met.

   (c)  Compute/find the value of the margin of error. (Use a 99% confidence level)

   $$(c) \ \underline{\hspace{2cm}}$$

   (d)  Interpret the meaning of the margin of error in the context of this problem.

   (e)  Construct a 99% confidence interval for the difference between the two population proportions.

   $$(e) \ \underline{\hspace{2cm}}$$

   (f)  Is zero included in the confidence interval? What does this suggest about the difference in the two population proportions?

(g)  <u>Communicate the Result</u>: Interpret the confidence interval.

(h)  <u>Communicate the Result</u>: Interpret the confidence *level*.

4. Using the 2% significance level, can you conclude that the proportion of all people with green jobs in North America who feel that they have job security is higher than the corresponding proportion for the United Kingdom?

5. Using the 5% significance level, can you conclude that the 401(k) participation rates are different for all U.S. employees of Asian heritage and all U.S. employees of Hispanic heritage?