**Part VII: Chapter 7: Confidence Intervals**

**For the purposes of confidence intervals, we will consider the data from 2014 only. Open the data set for 2014 in Statdisk. We assume that not all of the police involved deaths have been reported, so we will consider this to be a sample.**

**Task 1: Use the data set and Statdisk to find the following values of**  **(p hat) and** **. Be sure that your calculations reflect that gender was not reported in one case, race was reported in only 591 cases and method of death was not reported in 2 cases.**

* **Among the incidents in 2014, what was the percentage of female deaths?**
* **Among the incidents in 2014, what was the percentage of black deaths?**
* **Among the incidents in 2014, what was the percentage of European-American deaths?**
* **Among the incidents in 2014, what was the percentage of Asian deaths?**
* **Among the incidents in 2014, what was the percentage of Latino deaths?**
* **Among the incidents in 2014, what was the percentage of deaths involving a gunshot wound?**
* **Among the incidents in 2014, what was the mean age of all deaths involving police?**

**Task 2: You will be constructing confidence intervals for some of the percentage estimates calculated above.**

* **Describe what requirements must be met for these intervals to be valid and whether you think that this data set meets these requirements.**
* **Based on this data, construct a 95% confidence interval for the percentage of deaths involving Latinos.**
* **Interpret the meaning of the confidence interval in words.**
* **Demographically, Latinos represented 16.4% of the US population in 2014. How does this compare with the confidence interval?**

**Task 3:**

* **Based on this data, construct a 95% confidence interval for the percentage of deaths involving European-Americans.**
* **Interpret the meaning of the confidence interval in words.**
* **Demographically, European-Americans represented 72.4% of the US population in 2014. How does this compare with the confidence interval?**
* **How could you explain this mismatch?**

**Task 4: Use the mean age for all police-involved deaths to construct and complete the confidence interval table below.**

|  |  |  |
| --- | --- | --- |
| **Confidence Level** | **Confidence Interval** | **Margin of Error** |
| **80%** |  |  |
| **90%** |  |  |
| **95%** |  |  |
| **98%** |  |  |
| **99%** |  |  |

**Be examining this table, answer the following questions.**

* **As the confidence level increases, what happens to the width of the interval?**
* **As the confidence level increases, what happens to the margin of error?**
* **If the confidence level were 92%, would the confidence interval estimate be more or less precise than for 95%?**