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

**Task 1: Use the data set to find for the proportion of countries that have an average income level above the global average of $10850. To do this you will need to sort the data set for average income and count the number of countries whose average income is greater than $10850.**

* **Construct a 95% confidence interval for the proportion of countries with an average income greater than the global average income level.**
* **Describe what requirements must be met for this interval to be valid and whether you think that this data set meets these requirements.**
* **Interpret the meaning of the confidence interval in words.**

**Task 2: Repeat the confidence interval procedure for 80% confidence, 90% confidence, 98% confidence and 99% confidence.**

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| --- | --- | --- |
| **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%?**

**Task 3:**

* **Use the data set to find a 95% confidence interval for the mean amount of money per capita spent on health care. To do this you will need to find the mean and standard distribution of the column “health expenditure per capita”.**
* **Describe what requirements must be met for this interval to be valid and whether you think that this data set meets these requirements.**
* **Interpret the meaning of the confidence interval in words.**