# **Sample Mean and Proportion Report**

**Part 1: Statistical Samples and Populations**

In Part 1 of your report, you will again be addressing some fundamental questions asked by your client to help them understand statistical samples and populations. Address the following questions:

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| What is a statistical sample? How are statisticians sure that samples are representative of a population?  |
| *Write your response in this box.* |

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| What is an example of a statistical sample for a population?  |
| *Write your response in this box.* |

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| What is the importance of random sampling? How can bias be built into non-random samples?  |
| *Write your response in this box.* |

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| How can a bad sample detract from the accuracy of a statistical measure? Provide an example. |
| *Write your response in this box.* |

**Part 2: Samples of Country Health Spending**

In part 2 of your report, you will analyze random samples of data to better understand a larger population. You should use the same data set from Project One. Perform the following analyses:

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| Analyze the health spending (by percentage of GDP) by completing these two calculations on 3 samples:* Calculate the mean and standard deviation for the health spending (by percentage of GDP)
* Assume the health spending has a normal distribution and using the mean and standard deviation you calculated in the previous step, calculate the probability that the sample mean is more than 9% using the following samples (show the calculations of the Z-score for each sample).
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| *A random sample of 4 Countries* | *Write your response in this box.* |
| *A random sample of 16 countries* | *Write your response in this box.* |
| *A random sample of 32 countries* | *Write your response in this box.* |

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| Taking a random sample of 36 countries, determine the probability that the country’s domestic government health spending (as a percentage of total government spending) is above 8%, assuming it is a normal distribution. |
| *Write your response in this box.* |

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| Taking a random sample of 36 countries, determine the probability that the proportion of health spending (by percentage of GDP) is greater than 10%, assuming it is a normal distribution. |
| *Write your response in this box.* |

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| Taking a random sample of 36 countries, determine the probability that the proportion of health spending (as a percentage of total government spending) is greater than 12%, assuming it is a normal distribution. |
| *Write your response in this box.* |