Week 6 Paper Practice

Let's say we want to study global military expenditures. Consider the five countries with the highest military expenditures in 2022 (SIPRI Military Expenditure Database, 2023).

Note: Assume for the sake of this practice that the data for all countries and the countries selected below is normally distributed.

Table 1. *N=5*

Country	**Military Expenditures (% of GDP)**
U.S.	3.5
China	1.6
Russia	4.1
India	2.4
Saudi Arabia	7.4

1. What is the average military expenditure (in % of GDP) for this dataset? Fill in Table 2 below.

Table 2. *N=5*

Country	**X_i**	**μ**	**$(X_i-\mu)$**	**$(X_i-\mu)^2$**
U.S.	3.5			
China	1.6			
Russia	4.1			
India	2.4			
Saudi Arabia	7.4			
			$\sum(X_i - \mu)^2 =$	

2. Calculate the variance and standard deviation (σ) for this dataset. Use the respective formulas:

$$Variance = \frac{\sum_{i=1}^{N}(X_i - \mu)^2}{N}$$

$$\sigma = \sqrt{Variance}$$

3. Fill out Table 3 below. You will need the normal distribution z-score table in the Statistical Tables section at the end of the Meier, Brudney, and Bohte book. Use the formula below to calculate z-score:

$$Z = \frac{(X_i - \mu)}{\sigma}$$

Table 3. *N=5*

Country	**z**	**Table probability**	**% above z**	**% below z**
U.S.				
China				
Russia				
India				
Saudi Arabia				