Athlete Data Crunch

Student Name:

Introduction

Sport scientists and data analysts love the Olympics. They get to witness amazing performances and have access to thousands of results.

The last summer Olympic Games were held in 2016 in Rio De Janeiro, Brazil. More than **11,000** athletes from **205** countries took part. With **918** medals awarded over **306** events from **42** different Olympic sports. These Olympic events took place at **33** venues in the host city and at **five** separate venues in different Brazilian cities.

In this task, you will become a data researcher and analyst. Your challenge is to make the data from these Olympic Games more meaningful and easier to understand. You will need to use your researching, calculation and graphing skills.

Instructions

1. **Use your researching skills to fill in the missing data.**
    (Hint- Wikipedia is a great resource for this information)

Table 1. 2016 Rio Olympics Participant Data
Top 10 ranked countries based on athlete attendance at Olympics games

Rank	Country	Flag	Population to nearest million	Number of athletes at 2016 games
1	United States of America			554
2			207	465
3	Germany		83	425
4	Australia		24	
5			1379	413
6	France			399
7	Great Britain		64	366
8	Japan			338
9	Canada		36	
10			60	309

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Data Analysis

Using data from the completed Table 1, answer the following questions. Show the working out where possible so your teacher can see how you got to your answer.

HINT: if you get stuck, use the list of helpful formulas on page three.

Question 1.

What is the mean number of athlete participants from each country?

Question 2.

What is the smallest country by population? Write out the population in digits and words.

Question 3.

What is the largest country by population? Write out the population digits and words.

Question 4.

What is the range of the population data? *(Use the helpful formulas on page three if you are stuck)*

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Data Analysis

Question 5.

A friend from the United States of America, has been boasting about how great they are for having the most athletes attend the 2016 Olympic Games in Rio. But sometimes raw numbers don't tell the whole story!

Your task as the **data analyst**, is to make a new ranking system for the top five countries relative to the country's population size. This is known as **per capita** data.

It's a great way to show that some countries may be at an advantage to others, as the bigger countries have a larger population pool from which to develop athletes.

Once again, if you get stuck, use the list of helpful formulas at the bottom of the page.

Table 2. 2016 Rio Olympics Participant Data
Top 5 ranked countries based on athletes per million of population

Per capita rank	Country	Calculation	Athletes per million of population
1			
2	**France**	$\frac{399\ athletes}{67\ million} = 5.96$	5.96
3			
4			
5			

Helpful Formulas:

Use the following formulas to help you solve questions on the previous page.

- $Mean\ athletes = \frac{Total\ number\ of\ athletes}{number\ of\ countries}$

- $Range = Highest\ population - Lowest\ population$

- $Athletes\ per\ million\ population = \frac{Number\ of\ athletes}{Country\ population\ in\ millions}$

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Further challenge: Visual representation

Use a piece of paper, pencil and ruler to create a vertical column graph representing your new data set in Table 2, Athletes per million of population.