LAB 5 Worksheet

EX1: Identifying Mean (Average) Conditions

1. Collect the data and add it to Table 5.1.

Table 5.1 Vancouver Harbour and Okanagan Centre Maximum Temperatures and Total Precipitation for June 21, 1991 - 2020

Year	Vancouver Harbour Maximum Temperature (°C)	Vancouver Harbour Total Precipitation (mm)	Okanagan Centre Maximum Temperature (°C)	Okanagan Centre Total Precipitation (mm)
2020	20.7	0.0	27.0	0.0
2019	22.5	0.0	-	-
2018	22.0	0.0		
2017	19.6	0.0		
2016	18.5	15.6		
2015	24.8	0.0		
2014	19.7	-		
2013	18.1	1.0		
2012	21.0	0.0		
2011	-	-		
2010	16.3	-		
2009	18.3	0.2		
2008	20.7	0.0		
2007	22.1	0.2		
2006	20.4	-		
2005	23.4	6.0		
2004	27.8	0.0		
2003	17.7	-		
2002	25.9	0.0		
2001	24.9	0.0		
2000	21.5	0.0		
1999	17.9	2.8		
1998	23.5	0.2		
1997	16.6	21.8		
1996	22.8	0.0		
1995	20.1	0.0		
1994	23.7	0.0		
1993	16.3	3.2		
1992	28.4	0.0		
1991	16.1	0.2		
Mean				

2. Calculate the mean value for each variable at both locations, and fill in the bottom row of Table 5.1.

3. What are these numbers telling you about whether or not it is a good idea to hold the wedding at Vancouver Harbour vs. Okanagan Centre? (1 - 2 sentences)

EX2: Examining the Probability of Rain or Extreme Temperatures

4. Based on what has happened over the past 30 years, what is the probability of it raining on June 21 at
   a. Vancouver Harbour?

   b. Okanagan Centre?

5. Based on what has happened over the past 30 years on June 21, what is the probability of temperatures
   a. exceeding 30 $^{\circ}$C at Vancouver Harbour?

   b. being less than 20 $^{\circ}$C at Vancouver Harbour?

   c. exceeding 30 $^{\circ}$C at Okanagan Centre?

   d. being less than 20 $^{\circ}$C at Okanagan Centre?

6. Based on your responses to the above questions, what are your conclusions about where to hold the wedding? (2 - 4 sentences)

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EX3: Have Precipitation and Temperature Changed Over the Past 30 Years?

7. Paste your bar graph of June precipitation at Vancouver Harbour for the period 1991 - 2020 here:

8. Paste your line graph of June mean daily maximum temperature in Vancouver for the period 1991- 2020 here:

9. Are there any trends here? Your opinion will be a little subjective, but try to be as objective as possible. There are world-wide datasets that show warming trends. Explain your results in this world-wide context. (2 - 4 sentences)

10. In the context of climate change, is the average for the past 30 years a good way to estimate the probability of what will happen next year? On the basis of climate trends you identified, do you have any reason to adjust your thinking about the probability of rain or extreme temperatures in Vancouver? (2 - 4 sentences)

Reflection Questions

1. Now that you have some experience calculating means, can you think of another use for this new skill of yours?
    a. Describe a scenario where calculating the mean could help you make a decision in **your** life. Include a description of the data you would need to collect to help inform your decision.

    b. How long would you need to collect the data for in order for the mean to be representative? Explain your reasoning.

2. In EX3 you assessed trends in climate data based on one relatively small set of data. What type of data would you need to see larger trends?