(1) Rarely, the data we gather measures the entire population we care about so we have the parameters directly and don’t need to use "statistics" to predict them (e.g., many sports statistics). As discussed in class, in practice we usually take data from a sample, calculate "statistics" and then use them to make inferences about the population’s "parameters. Understanding the differences between samples and populations, statistics and parameters, is important to understanding the conceptual process of using statistics. Go the website:


and take a look at the different patterns of Netflix movie rentals. Assume for the purposes of this question that the authors used all the data that Netflix has (or could potentially have) to make the graphical tool on the website.

(a, 3 pts) Describe a scenario in which this data or subset of this data represents the statistics of a sample from which we would infer population parameters. Clearly describe why this data is a sample and which population it may be useful for studying.

(b, 3 pts) Describe a scenario in which this data or subset of this data represents the parameters of a population. Clearly describe the population it represents and why this data is not a sample in your scenario.

(2, 4 pts) There is a running route that I sometimes take from the intersection of Redondo and 10th St. East to Ximeno Ave and then South to 3rd St. then West to North Obispo and then North to 10th and then finally East again to the starting location. How far is this running route, in miles? Also, briefly describe the technique you use to calculate the distance in your answer.

(3, 3 pts ea) Use the following set of tabulated numbers to calculate the values represented by the summation notation (a)-(c) and to provide the summation notation asked for in question (d)

\[
\begin{array}{cccccccc}
2 & 2 & 6 & 6 & 6 & 6 & 6 & 8 \\
8 & 4 & 1 & 3 & 7 & 8 & 2 \\
6 & 4 & 3 & 5 & 5 & 6 & 4 \\
4 & 2 & 5 & 3 & 7 & 6 & 6 \\
8 & 8 & 7 & 5 & 3 & 8 & 6 \\
2 & 4 & 6 & 6 & 4 & 6 & 8 \\
4 & 6 & 8 & 8 & 4 & 6 & 4 \\
\end{array}
\]

(a) \[\sum_{i=1}^{5} x_{5,i} = \ldots\]

(b) \[\sum_{i=1}^{5} x_{i,2} = \ldots\]

(c) \[\sum_{i=3}^{5} \sum_{j=2}^{5} x_{i,j} = \ldots\]

(d) In the box at the right, provide the summation notation for the operations required to sum the odd numbers in the set above.
I find it very easy to remember people’s date of birth.
I am not very good at remembering people’s date of birth.
I am a good diplomat.
I enjoy meeting new people.
New situations make me anxious.
I find it difficult to work out people’s intentions.
I enjoy social occasions.
I like to carefully plan any activities I participate in.
I find it difficult to imagine what it would be like to be someone else.
When I was young, I used to enjoy playing games involving pretending with other children.
People often tell me that I keep going on and on about the same thing.
I am good at social chitchat.
If there is an interruption, I can switch back to what I was doing very quickly.
I find it easy to work out what someone is thinking or feeling just by looking at their face.
I am often the last to understand the point of a joke.
I enjoy doing things spontaneously.
I find it difficult to work out what someone is thinking or feeling just by looking at their face.
When I talk on the phone, I’m not sure when it’s my turn to speak.
I find it easy to do more than one thing at once.
I know how to tell if someone listening to me is getting bored.
I usually notice car number plates or similar strings of information.
Other people frequently tell me that what I’ve said is impolite, even though I think it is polite.
When I’m reading a story, I can easily imagine what the characters might look like.
I am fascinated by dates.
I notice patterns in things all the time.
I find it hard to make new friends.
I don’t particularly enjoy reading fiction.
When I’m reading a story, I can easily imagine what the characters might look like.
I usually notice number plates or similar strings of information.
Other people frequently tell me that what I’ve said is impolite, even though I think it is polite.
When I’m reading a story, I can easily imagine what the characters might look like.
I am fascinated by dates.
In a social group, I can easily keep track of several different people’s conversations.
I find social situations easy.
I tend to notice details that others do not.
I would rather go to a library than to a party.
I find making up stories easy.
I find myself drawn more strongly to people than to things.
I find making up stories easy.
I would rather go to a library than to a party.
I find social situations easy.
In a social group, I can easily keep track of several different people’s conversations.
I find social situations easy.
I tend to notice details that others do not.
I would rather go to a library than to a party.
I find making up stories easy.
I find myself drawn more strongly to people than to things.
I tend to have very strong interests, which I get upset about if I can’t pursue.
I enjoy social chitchat.
When I talk, it isn’t always easy for others to get a word in edgewise.
I find it difficult to work out the characters’ intentions.
I don’t particularly enjoy reading fiction.
I find it hard to make new friends.
I notice patterns in things all the time.
I would rather go to a theater than to a museum.
It does not upset me if my daily routine is disturbed.
I frequently find that I don’t know how to keep a conversation going.
I find it easy to ‘read between the lines’ when someone is talking to me.
I usually concentrate more on the whole picture, rather than on the small details.
I am not very good at remembering phone numbers.
I don’t usually notice small changes in a situation or a person’s appearance.
I know how to tell if someone listening to me is getting bored.
I find it easy to do more than one thing at once.
When I talk on the phone, I’m not sure when it’s my turn to speak.
I enjoy doing things spontaneously.
I am often the last to understand the point of a joke.
I find it easy to work out what someone is thinking or feeling just by looking at their face.
If there is an interruption, I can switch back to what I was doing very quickly.
I am good at social chitchat.
People often tell me that I keep going on and on about the same thing.
When I was young, I used to enjoy playing games involving pretending with other children.
I like to collect information about categories of things (e.g., types of cars, birds, trains, plants).
I find it difficult to imagine what it would be like to be someone else.
I like to carefully plan any activities I participate in.
I enjoy social occasions.
I find it difficult to work out people’s intentions.
New situations make me anxious.
I enjoy meeting new people.
I am a good diplomat.
I am not very good at remembering people’s date of birth.
I find it very easy to play games with children that involve pretending.