Instructions: Use the Excel file entitled “Temperature Change Quiz SP2020” available on Canvas to create graphs of the data in the file. Then, use the graphs to answer the questions below***.***

Download the file to your desktop. ***Save the file with your name in the file name. You will submit the file that you modify as part of your quiz***. Open the “Temperature Changes Quiz SP2020” Excel file.

Use the data contained in the file to make a SCATTER plot graph that shows the predicted temperatures over time for both 18°N and 68°N on the same graph. Add separate trendlines for the data from the two latitudes. Also, add the equations and R2 values for these two trendlines. SAVE your file! Use your graph to answer the questions below.

1. What were the *rates in change in temperature over time* between 2000-2090 at the two latitudes? (NOTE: include the units with the numbers that you write.)

(10 pts)

* 1. Latitude 18°N \_\_\_0.0073 °F/yr\_\_\_\_\_\_\_\_\_
  2. Latitude 68°N \_\_\_\_\_0.3388 °F/yr\_\_\_\_\_\_\_

1. Using the *rates in change in temperature over time* that you found doing the regression analyses (your answers to question 1), what is the predicted total change in temperature at each Latitude between 2000-2100? (NOTE: include the units with the numbers that you write.)

(10 pts)

* 1. Latitude 18°N \_\_\_0.73 °F \_\_\_\_\_\_\_\_\_
  2. Latitude 68°N \_\_\_\_\_33.88 °F\_\_\_\_\_\_\_

1. At which of the two latitudes would you expect to see the larger increase in January temperatures to occur by 2090? (10 pts)

Latitude 68°N, the more northern altitude, will see a larger increasing temperature over the next century.

1. How did you decide which latitude would see the larger change in temperature? (10 pts)

Greater rate of change in temperature per year will result in a larger total increase in temperature at Latitude 68°N over that time period. The total predicted increase in temperature by 2100 would be 34°F at Latitude 68°N, and only 0.73 °F at Latitude 18°N.

Graph Grading Rubric

* Graph contains the correct data as described in the question: 30 points
* Graph Axes labeled correctly including units: 20 pts
* Descriptive graph title: 10 pts

Change in Temperature Quiz Grade:

|  |  |  |
| --- | --- | --- |
| Graph Characteristic | Possible | Earned |
| Correct Data | 30 |  |
| Axes Labeled | 20 |  |
| Graph title | 10 |  |
| Questions 1 - 4 | 50 |  |
| Quiz Total | 100 |  |

Notes: