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## Chapter 6 <br> Performance Task (continued)

## Heat Index

Heat Index is a measure of how hot it feels on a warm day. When the humidity (the amount of moisture in the air) is high, sweat does not dry as quickly. So, the air feels hotter than it does during times of low humidity. When the relative humidity is $80 \%$, every $1^{\circ}$ increase in temperature above $83^{\circ} \mathrm{F}$ causes a $3^{\circ}$ temperature increase in Heat Index. How can you use a function to represent this relationship?

1. Complete the table assuming the relative humidity is $80 \%$.

| Temperature ( ${ }^{\circ} \mathrm{F}$ ) | 83 | 84 | 85 | 86 | 87 | 88 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Heat Index ( ${ }^{\circ} \mathrm{F}$ ) | 91 |  |  |  |  |  |

2. Plot the points in the table and draw a line through the points. Then describe the pattern.

3. Write a linear function for this data. Explain your reasoning.
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## Chapter

## Heat Index

4. What are the independent and dependent variables in the function? Explain your reasoning.
5. Heat Index is an important indicator of dangerous temperatures. With $80 \%$ relative humidity, the Heat Index category changes from "danger" to "extreme danger" at a temperature of $94^{\circ} \mathrm{F}$. What is the Heat Index in this situation?
