

91. **Make a Decision** The table shows the monthly normal daily high temperature (in degrees Fahrenheit) for Phoenix, Arizona  $P$  and Seattle, Washington  $S$ . In the table,  $t$  represents the month, with  $t = 1$  corresponding to January. (*Data Source: U.S. Department of Commerce*)

Month, $t$	$P$	$S$
1	65.0	46.9
2	69.4	50.5
3	74.3	54.5
4	83.0	59.3
5	91.9	64.9
6	102.0	69.5
7	104.2	74.5
8	102.4	74.9
9	97.4	69.9
10	86.4	60.3
11	73.3	51.5
12	65.0	46.5

- Use the *sine regression feature* of a graphing utility to find sine models to fit each set of data.
- Use a graphing utility to graph each model from part (a) with the original data. How well does each model fit the original data?
- A monthly normal daily high temperature of  $50^{\circ}\text{F}$  is reported. Determine the month(s) in which this high temperature is most likely reported in each city, if possible. Explain your results.
- A mean monthly temperature of  $66^{\circ}\text{F}$  is reported. Determine the month(s) in which this temperature is most likely reported in each city, if possible. Explain your results.
- A mean monthly temperature of  $73^{\circ}\text{F}$  is reported. Determine the month(s) in which this temperature is most likely reported in each city, if possible. Explain your results.
- A mean monthly temperature of  $85^{\circ}\text{F}$  is reported. Determine the month(s) in which this temperature is most likely reported in each city, if possible. Explain your results.