



## Personal Tutors Chapter 15

### Personal Tutor Activity 15.1 – Evaluate a Survey

- 1. Apply** A new engineer is working on a new model of cellular telephone. He or she needs to determine what types of features this cell phone should have. To do this, the design firm has indicated that a survey should be created. The engineer has been asked to provide the design firm with a list of features it should consider as it creates its first prototype. Create a list of features you believe will be needed for this new cell phone. Consider available technologies and the cell phone market. Make sure to establish a target audience.
- 2. Starting Hint** Determine the target audience first. Additional constraints, such as cost, should also be identified before the survey is delivered.

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### Personal Tutor Activity 15.2 – Deductive Reasoning

- 1. Apply** An engineer has attended a seminar on the practicality of using hybrid-electric vehicles for government agencies. The data provided from the consultant advocating the change to hybrid vehicles indicates that if a city employee drives less than 150 miles in one day, the city can save approximately \$5 each day the employee drives a hybrid-electric car. If the employee drives more than 150 miles in one day, the city can only save approximately an additional \$1 per day. The engineer reviews the data for his city and notes that 50% of the employees drive less than 150 miles per day but 50% of the employees drive up to 400 miles per day. The engineer also notes they would have to hire approximately four new mechanics to maintain the hybrid-electric cars, at approximately \$75,000 per year. Assuming the purchase cost of the cars are approximately the same as the cars already owned, do you think this engineer should recommend the change to hybrid-electric vehicles? Why or why not?
- 2. Starting Hint** Identify missing pieces of information. Determine an approximate annual savings for the city. Then compare the savings to the annual salary costs of the new mechanics. Assume the city vehicles will be utilized 365 days of the year.