Data Detectives   
Cracking Consumer Choices

**Data Management**

**Unit 1 Line Master 19a**

**Cellphone Searching**

1. Christopher is researching data on new cell phones.   
They found review data for a particular phone on a brand’s website.

|  |  |
| --- | --- |
| **Number of Stars** | **Percent of Reviews** |
| 🟊 | 18% |
| 🟊🟊 | 10% |
| 🟊🟊🟊 | 17% |
| 🟊🟊🟊🟊 | 19% |
| 🟊🟊🟊🟊🟊 | 36% |

a) If 2000 people recently bought that phone, calculate to predict how many   
you would expect to give five-star reviews.

b) What assumptions did you make in your prediction?

c) Do you think this is a reasonable prediction? What biases might impact   
the accuracy of your prediction? Explain your thinking.

**Laptop Batteries**

2. Thirty laptops of a particular brand had their battery life tested.   
Chet is hoping to find a laptop that has a battery life of at least 14 hours.

a) The first five results were 10.5, 13.2, 9.8, 14.9 and 11.7 hours.

How does this sample compare to Chet’s requirement?

b) What recommendation might you make based on this sample?

Data Detectives   
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**Unit 1 Line Master 19b**

c) The table below shows the data, in hours, for all 30 laptops tested.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 10.5 | 13.2 | 9.8 | 14.9 | 11.7 |
| 14.5 | 9 | 10.25 | 8 | 14.8 |
| 15.7 | 16.1 | 10.5 | 15 | 14.5 |
| 13.9 | 14.1 | 14.2 | 12.5 | 16 |
| 15 | 12 | 10 | 15 | 14.7 |
| 12.25 | 18 | 15.5 | 9.5 | 10.75 |

How does this sample compare to Chet’s requirement?

d) Would you change your recommendation based on this larger sample?   
Explain your thinking.

**Collectible Cards**

3. A deck of collectible cards contains three types of cards:   
base cards, rare cards, and ultrarare cards.

a) Someone says that there is about a 33% chance that a given card is a rare card. What assumptions might this person have made? Are they correct?

b) You buy four decks, each with 50 cards. You find that there are 3, 5, 2, and 12   
rare cards in the decks. What was the experimental probability that a given card   
was a rare card?

c) Do you think this prediction (experimental probability) is accurate?

Why or why not?