27th November

Completed Exercises from the lecture on

< Inference >

L. Hard, Pages 2-4;

Can be found below.

Hard

(1) **85939da5** MULTIPLE CHOICE One answer only

Texting behavior	Talks on cell phone daily	Does not talk on cell phone daily	Total
Light	110	146	256
Medium	139	164	303
Heavy	166	74	240
Total	415	384	799

30% ± 3%

1 most likely

In a study of cell phone use, 799 randomly selected US teens were asked how often they talked on a cell phone and about their texting behavior. The data are summarized in the table above. Based on the data from the study, an estimate of the percent of US teens who are heavy texters is 30% and the associated margin of error is 3%. Which of the following is a correct statement based on the given margin of error?

a. Approximately 3% of the teens in the study who are classified as heavy texters are not really heavy texters.

b. The percent of all US teens who are heavy texters is 33%.

c. It is not possible that the percent of all US teens who are heavy texters is less than 27%.

d. It is doubtful that the percent of all US teens who are heavy texters is 35%.

(2) **c7e73ece** SHORT ANSWER Case-Insensitive

Views on Nuclear Energy Use	
Response	Frequency
Somewhat favor	214
Somewhat oppose	104
Strongly oppose	37

Strongly Favour 56

94

A researcher interviewed 411 randomly selected US residents and asked about their views on the use of nuclear energy. The table above summarizes the responses of the interviewees. If the population of the United States was 300 million when the survey was given, based on the sample data for the 411 US residents, what is the best estimate, in millions, of the difference between the number of US residents who somewhat favor or strongly favor the use of nuclear energy and the number of those who somewhat oppose or strongly oppose it? (Round your answer to the nearest whole number.)

1. (in millions) favor : $197,100,000 \simeq \frac{214+56}{411} \times 300,000,000$

2. (in millions) oppose : $102,900,000 \simeq \frac{104+37}{411} \times 300,000,000$

$93,900,000$

$\simeq 94$

(4) **9ba3e283** MULTIPLE CHOICE One answer only

In State X, Mr. Camp's eighth-grade class consisting of 26 students was surveyed and 34.6 percent of the students reported that they had at least two siblings. The average eighth-grade class size in the state is 26 . If the students in Mr. Camp's class are representative of students in the state's eighth-grade classes and there are 1,800 eighth-grade classes in the state, which of the following best estimates the number of eighth-grade students in the state who have fewer than two siblings?

a. 46,800
b. 16,200
c. 23,400
d. 30,600

Total of marks: 15

In class:

34.6% have ≥ 2 siblings

65.4% have < 2 siblings

avg: 1800 × 26 students = 46,800

65.4% of 46,800 ≈