2.

Construct the confidence interval for the population mean μ.

c=0.95​, x overbar equals 4.3 x=4.3​, σ=0.3​, and n =49

A 95​% confidence interval for μ is ).

​(Round to two decimal places as​ needed.)

3.

Construct the confidence interval for the population mean μ.

c=0.98​, x overbar equals 16.2x=16.2​, σ=6.0​, and n=75

A 98​% confidence interval for μ is \_\_\_\_\_\_\_\_\_\_

​(Round to one decimal place as​ needed.)

4..

Find the minimum sample size n needed to estimate μ for the given values of​ c,

σ​, and E.

c=0.98​, σ=8.7​, and E equals=2

Assume that a preliminary sample has at least 30 members.

n=

​(Round up to the nearest whole​ number.)

5.

People were polled on how many books they read the previous year. How many subjects are needed to estimate the number of books read the previous year within one book with 99​% ​confidence? Initial survey results indicate that σ=19.8 books.

A 99% confidence level requires \_\_\_\_\_\_\_\_\_\_\_



subjects.

​(Round up to the nearest whole number as​ needed.)

6.

A doctor wants to estimate the HDL cholesterol of all​ 20- to​ 29-year-old females. How many subjects are needed to estimate the HDL cholesterol within 4 points with 99% confidence assuming

 σ=15.7?

Suppose the doctor would be content with 95% confidence. How does the decrease in confidence affect the sample size​ required? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

A​ 99% confidence level requires  subjects.

​(Round up to the nearest whole number as​ needed.)

7.

In a survey of 3367 ​adults, 1487 say they have started paying bills online in the last year.

Construct a​ 99% confidence interval for the population proportion. Interpret the results.

A​ 99% confidence interval for the population proportion is

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​(Round to three decimal places as​ needed.)

8.

In a survey of 6000 ​women, 3431 say they change their nail polish once a week. Construct a 95% confidence interval for the population proportion of women who change their nail polish once a week.

A 95​% confidence interval for the population proportion is

\_\_\_\_\_\_​(Round to three decimal places as​ needed.)

9.

A researcher wishes to​ estimate, with 95​% confidence, the population proportion of adults who are confident with their​ country's banking system. His estimate must be accurate within 4​% of the population proportion.

​(a) No preliminary estimate is available. Find the minimum sample size needed. \_\_\_\_\_\_

​(b) Find the minimum sample size​ needed, using a prior study that found that 36​% \_\_\_\_\_\_

of the respondents said they are confident with their​ country's banking system.

​(c) Compare the results from parts ​(a) and (b).

​

(a) What is the minimum sample size needed assuming that no prior information is​ available?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​(Round up to the nearest whole number as​ needed.)

10.

A researcher wishes to​ estimate, with 90​% confidence, the population proportion of adults who say chocolate is their favorite ice cream flavor. Her estimate must be accurate within

4​% of the population proportion.

​(a) No preliminary estimate is available. Find the minimum sample size needed.\_\_\_\_\_

​(b) Find the minimum sample size​ needed, using a prior study that found that 38​% \_\_\_\_\_\_\_

of the respondents said their favorite flavor of ice cream is chocolate.

​(c) Compare the results from parts​ (a) and​ (b).

​(a) What is the minimum sample size needed assuming that no prior information is​ available?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​(Round up to the nearest whole number as​ needed.)

10.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| The table to the right shows the results of a survey in which 2600 adults from Country​ A, 1106 adults from Country​ B, and 1051 adults from Country C were asked if human activity contributes to global warming. Complete parts​ (a), (b), and​ (c). |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Adults who say that human activity contributes to global warming |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Open in StatCrunch |  | +  |
|  | Copy to Clipboard |  | +  |
|  | Open in Excel |  | +  |

 |
| Country A | 66% |
| Country B | 90​% |
| Country C | 94​% |

 |

​(a) Construct a 95​%

confidence interval for the proportion of adults from Country A who say human activity contributes to global warming.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_​(Round to three decimal places as​ needed.)

11.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **The table shows the results of a survey in which separate samples of 400 adults each from the​ East, South,​ Midwest, and West were asked if traffic congestion is a serious problem in their community. Complete parts​ (a) and​ (b).****Table****BAD TRAFIC CONGESTION****Adults who say that traffic congestion is a serious problem****East 35%****South 32%****Midwest 25%****West 54%** | EastSouthMidwestWest35%32%25%54% |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Open in StatCrunch |  | +  |
|  | Copy to Clipboard |  | +  |
|  | Open in Excel |  | +  |

 |

​(a) Construct a​ 95% confidence interval for the proportion of adults from the

South who say traffic congestion is a serious problem.

The​ 95% confidence interval for the proportion of adults from the South who say traffic congestion is a serious problem is \_\_\_\_\_\_\_\_\_\_\_\_

​(Round to three decimal places as​ needed.)