Name



Statistical Analysis

1 What percentage of days are below 20?

The daily high temperatures in degrees are normally distributed with a mean of 18 and a standard deviation of 2.

A 15.9%	B 83.9%
C 50%	D 84.1%

2 Find the percentage.

A 0.96%	B 3.67%
C 0.04%	D 96.33%

3 What percentage of batteries are between 54 and 62?

The battery lifetimes in hours are normally distributed with a mean of 50 and a standard deviation of 4. What percentage of batteries are between 54 and 62?

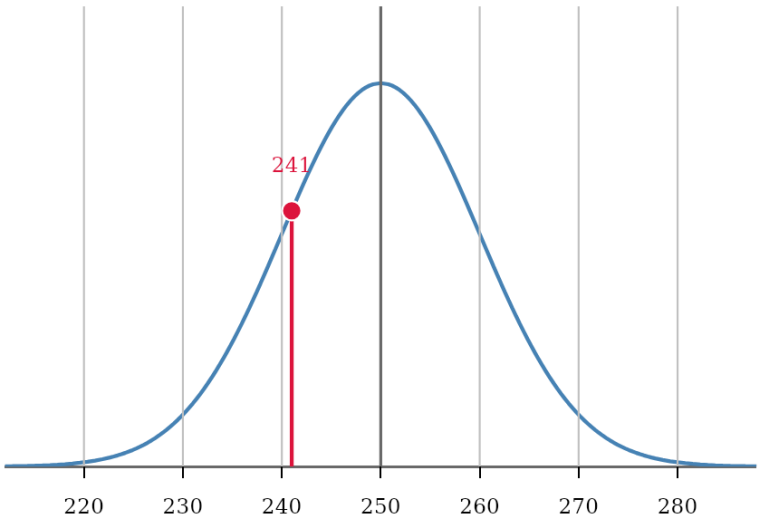
A 49.8%	B 84.3%
C 15.7%	D 2.1%

4 What percentage of the data lies between -3σ and the mean in a normal distribution?

-3σ to mean

A 50%	B 50.2%
C 47.7%	D 49.8%

5 Mean 250 ms, standard deviation 10 ms. Find the z-score of the marked point.



A -1.0
B 0.9
C -0.9
D -1.4

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6 Find the z-score.

A exam mark of 84 comes from data with mean 100 and standard deviation 10. Use z = (x - mean) / standard deviation.

A -2.1	B -2.0
C -1.6	D 1.6

7 Find the z-score.

A exam mark of 96 comes from data with mean 100 and standard deviation 10.

A 0.4	B -0.9
C 0.6	D -0.4

8 Which data set matches this result?

Set A had the better performance (the higher z-score). Which pair of results fits?

A

Set A	Set B
Mean : 100	Mean : 100
SD : 10	SD : 20
Value : 124	Value : 70

B

Set A	Set B
Mean : 100	Mean : 100
SD : 10	SD : 20
Value : 85	Value : 148

9 Read the z-table value.

A 0.8790	B 0.8810
C 0.8962	D 0.8770

10 Which performance was better?

Set A	Set B
Mean : 170 cm	Mean : 175 cm
SD : 10 cm	SD : 5 cm
Value : 153 cm	Value : 183 cm

A Set B	B Set A

11 Why does this sampling approach introduce bias?

Goal: Student satisfaction with cafeteria food Sampling approach: Ask students, "How bad is the cafeteria food this year?"

A Students may remember cafeteria meals from earlier in the year more clearly than recent meals.

B The wording of the question may encourage students to report lower satisfaction.

12 Is this sample representative of the population?

Population: All pet owners in Canada Sample: 1,200 customers visiting veterinary clinics

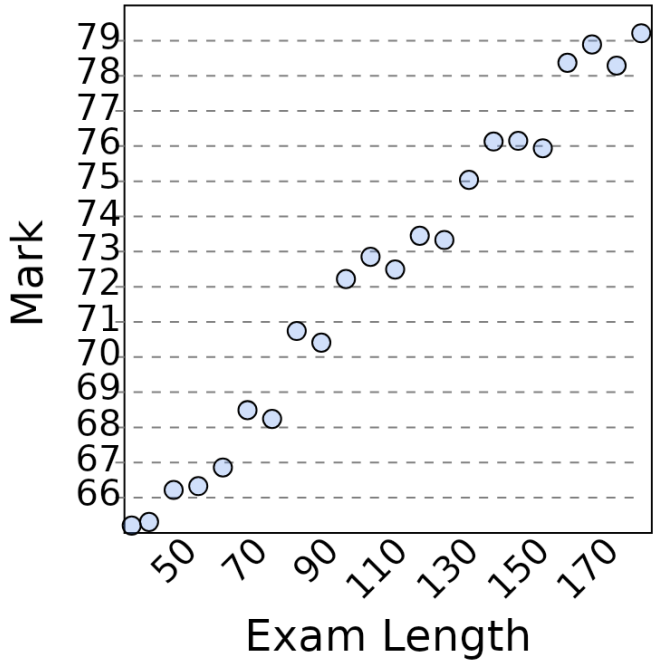
A Yes, it is representative of the population

B No, it is not representative of the population

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Statistical Analysis

13 What is the equation of the trend line on this scatter plot?



A
Mark = -0.1*Exam Length + 62

B
Mark = 0.2*Exam Length + 62

C
Mark = 0.1*Exam Length + 62

D
Mark = 0.1*Exam Length + 68

14 Which sample is most representative of this population?

Population: All restaurants in a city

A 250 restaurants that offer food delivery

B 250 restaurants randomly selected from the city's business registry

15 Why is this survey question problematic?

Survey question: How many times do you usually visit the gym each week?

A The question may not apply to everyone because gym memberships vary in cost.

B The question may not apply to everyone because it assumes respondents go to a gym.

16 What type of correlation does this R value indicate?

-0.3

A weak negative correlation

B no correlation

C weak positive correlation

D strong positive correlation