

# Guideline Quizzes for Module 9

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## Question 1

1 point

What is the probability of randomly selecting a mouse that weighs between 32 and 34 grams from a distribution with a mean of 32 grams and standard deviation of 2.5 grams?

Choose at least one correct answer

☐ (A) 0.29

☐ (B) 0.95

☐ (C) 0.12

☒ (D) 0.68

Correct answer

## Question 2

1 point

Which of the following statements is true about probability and likelihood?

Choose at least one correct answer

☐ (A) Probability and likelihood are the same thing.

☒ (B) Probability is the area under the curve of a distribution, while likelihood is the height of the curve at a specific point.

Correct answer

## Question 3

1 point

What is the maximum likelihood estimate (MLE) of the mean of a distribution, given a set of data?

Choose at least one correct answer

☐ (A) The median of the data

☐ (B) The mode of the data

☒ (C) The mean of the data

Correct answer

- ☐ D The standard deviation of the data

#### Question 4

1 point

Which of the following is an example of a situation where the MLE is not a good estimate of the true parameter?

Choose at least one correct answer

- ☐ A When the sample size is small
- ☐ B When the data is not normally distributed
- ☐ C When there are outliers in the data

- ☒ D All of the above

Correct answer

#### Question 5

1 point

Which of the following is an advantage of using the MLE?

Choose at least one correct answer

- ☐ A It is always unbiased.
- ☐ B It is easy to calculate.
- ☐ C It is always consistent.
- ☐ D It is always efficient.

Correct answer

#### Question 6

1 point

Probability is a measure of how likely something is to happen, while likelihood is a measure of how likely it is to observe a certain measurement.

- ☒ A True

Correct answer

- ☐ B False

### Question 7

1 point

The MLE of the mean is always equal to the mean of the data.

☐ A True

☒ B False

Correct answer

### Question 8

1 point

Probability is always between 0 and 1, while likelihood can be any real number.

☐ A True

☒ B False

Correct answer

### Question 9

1 point

The MLE of the standard deviation is always equal to the standard deviation of the data.

☐ A True

☒ B False

Correct answer