

Statistical Questions Scenarios

Scenario #1

Diane Ma, data scientist for the Lakers Basketball team, is analyzing data to help players win games. She's come up with some initial statistical questions but would like to transform them into good statistical questions.

1. Identify the type of statistical question (summary, comparison, or association) and then go through the process of transforming it into a good statistical question.
I wonder:
 - a. Which player scores the most points?
 - b. Does a certain position (center, power forward, small forward, point guard, shooting guard) score more points?
2. Write another statistical question you can ask that might help to win basketball games.

Scenario #2

The president comes to visit, and you want to take the opportunity to ask him some good statistical questions. Your friends offer the following initial statistical questions to get you started.

1. Identify the type of statistical question (summary, comparison, or association) and then go through the process of transforming it into a good statistical question.
I wonder:
 - a. Is one state's spending more than another?
 - b. Does someone in a big family spend a lot on healthcare?
2. Write another statistical question that you could ask the president.

Scenario #3

Instagram is trying to streamline their platform and designate proper resources to each feature (i.e. Posts, Reels, etc.). Their team has some initial statistical questions to help them brainstorm ideas of what type of data they will need to collect.

1. Identify the type of statistical question (summary, comparison, or association) and then go through the process of transforming it into a good statistical question.
I wonder:
 - a. Who has shared the most pictures?
 - b. Are different features used at different times of the day or week?
2. Write another statistical question that may help Instagram streamline their resources.

Scenario #4

Sergey Brin, co-founder of Google, is giving a talk on how people use Google today. Your class has brainstormed some questions but still needs to change the following initial statistical questions.

1. Identify the type of statistical question (summary, comparison, or association) and then go through the process of transforming it into a good statistical question:
I wonder:
 - a. Do all countries do the same amount of Google searches?
 - b. How many links have been returned in a search?
2. Write another statistical question related to how people use Google today.

Statistical Questions Scenarios

Answer Key

Scenario #1

Diane Ma, data scientist for the Lakers Basketball team, is analyzing data to help players win games. She's come up with some initial statistical questions but would like to transform them into good statistical questions.

1. Identify the type of statistical question (summary, comparison, or association) and then go through the process of transforming it into a good statistical question.

I wonder:

- a. Which player scores the most points? *This is a summary statistical question. A possible good statistical question is: How many points do the Lakers typically score during a game?*
 - b. Does a certain position (center, power forward, small forward, point guard, shooting guard) score more points? *This is a comparison statistical question. A possible good statistical question is: Is there a difference in points scored between playing a Lakers power forward position and a Lakers small forward position?*
2. Write another statistical question you can ask that might help to win basketball games. *A possible associative statistical question is: Do the players who have been on the Lakers team for a longer period of time tend to typically have more play time in each game?*

Scenario #2

The president comes to visit, and you want to take the opportunity to ask him some good statistical questions. Your friends offer the following initial statistical questions to get you started.

1. Identify the type of statistical question (summary, comparison, or association) and then go through the process of transforming it into a good statistical question.

I wonder:

- a. Is one state's spending more than another? *This is a comparison statistical question. A possible good statistical question is: is there a difference in the typical yearly spending of California and Texas?*
 - b. Does someone in a big family spend a lot on healthcare? *This is an associative statistical question. A possible good statistical question is: Does bigger family size tend to have higher healthcare spending?*
2. Write another statistical question that you could ask the president. *A possible summary statistical question is: How many years do Americans typically spend in school?*

Statistical Questions Scenarios

Answer Key

Scenario #3

Instagram is trying to streamline their platform and designate proper resources to each feature (i.e. Posts, Reels, etc.). Their team has some initial statistical questions to help them brainstorm ideas of what type of data they will need to collect.

1. Identify the type of statistical question (summary, comparison, or association) and then go through the process of transforming it into a good statistical question.
I wonder:
 - a. Who has shared the most pictures? *This is a summative statistical question. A possible good statistical question is: What is the typical number of pictures shared on Instagram?*
 - b. Are different features used at different times of the day or week? *This is a comparative statistical question. A possible good statistical question is: Do people tend to share more Instagram Posts during the afternoon than Instagram Reels?*
2. Write another statistical question that may help Instagram streamline their resources. *A possible associative statistical question is: Does having more Instagram Posts tend to have more likes?*

Scenario #4

Sergey Brin, co-founder of Google, is giving a talk on how people use Google today. Your class has brainstormed some questions but still needs to change the following initial statistical questions.

1. Identify the type of statistical question (summary, comparison, or association) and then go through the process of transforming it into a good statistical question:
I wonder:
 - a. Do all countries do the same amount of Google searches? *This is a comparative statistical question. A possible good statistical question is: Is there a difference in the typical number of Google searches between United States of America and Australia?*
 - b. How many links have been returned in a search? *This is a summative statistical question. A possible good statistical question is: What is the typical number of links returned with each Google search?*
2. Write another statistical question related to how people use Google today. *A possible associative statistical question is: Does including more words in your search tend to have more results/links to follow?*