Results

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This assessment has been regraded. Questions 2, 5 have been affected.

100%

12
Out of 12 points

04:04
Time for this attempt

Your Answers:

1 1 / 1 point

Use your intuition to decide which the following sets of events are likely to be independent.

- Event A: A randomly selected person is married with no children.
  Event B: A randomly selected person opposes a tax credit for children.
- ✓ Event A: The randomly selected carton of milk you purchased from the store is sour.
  Event B: Your car won't start on a randomly selected morning.
- Event A: You roll a number larger than four on a die.
  Event B: Rolling a six on a die.
- Event A: Drawing a club from a deck of cards.
  Event B: Drawing a card with a black symbol from a deck of cards.

This question has been regraded.

2 Previous score 1 / 1 point Regrade score 1 / 1 point

If two events A and B are mutually exclusive, which of the following statements is true?

- P(A) + P(B) > P(A or B)
- ✗ A and B are independent

Correct Answer: **P(A|B) = 0**

- P(A|B) = 0
- P(A)P(B) = 0
- P(A and B) = P(A)P(B)

3 1 / 1 point

Many people who use coconut oil claim it helps with hair care, skin care, stress relief, weight loss, and a boosted immune system. Can we conclude that the use of coconut oil causes these health benefits?

- Yes, the claims are from experiments and give us a good comparison group to find health differences.
- No, the claims can be lies, so we do not have evidence of the health benefits
- Yes, the claims are true stories, so we do have evidence of the health benefits.
- ✓ No, the claims are anecdotes and do not give us a comparison group to find health differences.

4 1 / 1 point

If 20 babies are born, how often are there 8 or less male babies? Assume that the gender of a baby is a random event with equal chance. Which of the following experiments would not simulate this situation?

- Roll a die twenty times. Designate a 1, 2, or 3 to mean "female" and a 4, 5, or 6 to mean "male"

Roll a die twenty times. Designate a 1, 2, or 3 to mean "female" and a 4, 5, or 6 to mean "male".

Randomly draw a digit from 1-10, repeat 20 times. Designate even numbers to mean "female" and odd numbers to mean "male".

Flip a coin twenty times, Designate a head to mean "female" and a tail to mean "male".

✓ All of these will simulate the situation

Non of these will simulate the situation

This question has been regraded.

5 Previous score 1 / 1 point Regrade score 1 / 1 point

Which of the following equations can NOT be used to verify that two events are independent?

P(A and B) = P(A)P(B)

P(A|B) = P(A)

✓ P(A or B) = P(A) + P(B)

P(B|A) = P(B)

6 1 / 1 point

A study recruited 1000 people to participate in a weight loss program. Participants are allowed to choose whether they want to go on a vegetarian diet or follow a traditional low-calorie diet that includes some meat. Half of the people choose the vegetarian diet, and half choose to be in the control group and continue to eat meat. The study found that there is greater weight loss in the vegetarian group.

Which of the following is correct about the study?

We can not conclude that vegetarian diet helps people lose more weight because the sample size is too small.

The result of the study is not reliable because there is no control group.

✓ The result of the study is not reliable because there is no randomization and the confounding variables are not controlled.

We can conclude that vegetarian diet helps people lose more weight because this is an experimental study.

7 1 / 1 point

A sample of 130 adults were asked whether they worked part time while at college. The table shows the results for men and women.

	Men	Women
Yes	45	30
No	35	20

What is the probability that a sampled adult is woman OR worked part time while at college?

23.1%

96.2%

✓ 73.1%

57.7%

8 1 / 1 point

Three events A, B and C are **independent** to each other. It is known the probability of event A occurring is 0.2, and the probability of all three event occurring at the same time is 0.18.
What is probability of event B and C occurring at the same time? (hint: multiplication rule for independent events)

0.36

0.16

✓ 0.9

Cannot be determined

9 1 / 1 point

Which of the following is an example of theoretical probability? (Select all that apply)

- [ ] A homeowner notes that five out of seven days the newspaper arrives before 5 pm. He concludes that the probability that the newspaper will arrive before 5 pm tomorrow is about 71%.
- [x] At a carnival shell game the player can pay three dollars and choose the shell that he or she believes is hiding the prize. There are four shells that are thoroughly mixed up after each guess. The player concludes that there is a one in four chance of randomly picking the winning shell.
- [ ] A bag contains 2 red marbles, 8 blue marbles, and 4 green marbles. Adam randomly selected a marble from the bag and repeated 50 times. He counted the number of times a blue marble is selected, and claimed that the probability of choosing a blue marble is 40%.
- [x] A six-sided die is rolled and a coin is tossed. The probability of getting a tail on the coin and a 2 on the die is 8.3%.

10 1 / 1 point

Suppose that a recent poll of American households with a car found that, 39% owned a sedan, 33% owned a van, and 7% owned a sports car.
Suppose that three households are selected independently, what is the probability that **all of the three** randomly selected households **own a van**?

- 0.330
- ✓ 0.036
- 0.964
- 0.059

11 1 / 1 point

Consider the following statement: "a study found that people who consume more alcohol are more likely to die at an early age"

Which of the following is a possible confounding variable in this study?

- Smoking
- Gender
- Socioeconomic status
- None of these
- ✓ All of these

12 1 / 1 point

A senator conducted a poll in her state by calling 100 people whose names were randomly sampled from the phone book (mobile phones and unlisted numbers aren't in phone books). The senator's office called those numbers until they got a response from all 100 people chosen.
What bias may exist in the study?

- Volunteer
- No obvious bias
- ✓ Undercoverage
- Nonresponse