Quiz for Probability (Feb 23)

Due 23 Feb 2022 at 11:00 **Points** 10 **Questions** 10
Available 23 Feb 2022 at 10:00 - 23 Feb 2022 at 11:02 1 hour and 2 minutes
Time limit None

This quiz was locked 23 Feb 2022 at 11:02.

Attempt history

	Attempt	Time	Score
LATEST	Attempt 1	37 minutes	4 out of 10

Score for this quiz: **4** out of 10
Submitted 23 Feb 2022 at 10:37
This attempt took 37 minutes.

Question 1

0 / 1 pts

Consider tossing a fair die. Define two events as follows

A = {getting the number 4},

B = {getting an even number}

What is P(A|B)?

orrect answer

- 1/3

ou Answered

- 1/2

- 1/4

- 1/5

Question 2

1 / 1 pts

Let A, B and C be three events with P(A)=0.2, P(B)=0.3 and P(C)=0.5. Assume A and B are disjoint.

What is P(A U B)? Here A U B means the union of A and B.

- 0.6
- 0.3
- 0.4
- 0.5

Correct!

Question 3

1 / 1 pts

Let A, B and C be three events with P(A)=0.2, P(B)=0.3 and P(C)=0.5. Assume A and B are disjoint. Assume A U B and C are independent. Here A U B means the union of A and B.

What is P(A U B U C)?

- 0.6
- 0.8
- 0.75
- 0.5

Correct!

Question 4

0 / 1 pts

Throw a fair die twice and we get two numbers. Let

A = {the maximum of two numbers is 3};

B = {the minimum of two numbers is 3}.

Which of the following statement is true?

- A and B are independent
- orrect answer — A and B are dependent
- ou Answered — A and the complement of B are disjoint
- A and B are disjoint

Question 5

0 / 1 pts

Your aunt is arriving at Birmingham tomorrow and you would like to know how likely it is for she to be on time. Let us assume

P(she is late | rain) = 0.75

P(she is late | no rain) = 0.25

After checking out a weather website, you have a guess P(rain) = 0.2.

What is the probability of your aunt to be late?

- orrect answer — 0.35
- ou Answered — 0.2
- 0.1
- 0.4

Question 6

1 / 1 pts

Your aunt is arriving at Birmingham tomorrow and you would like to know how likely it is for she to be on time. Let us assume

P(she is late | rain) = 0.75

P(she is late | no rain) = 0.25

After checking out a weather website, you have a guess P(rain) = 0.2.

If you know the aunt is late, what is your updated probability of rain, i.e., P(rain | she is late)?

Correct!

- (◉) 3/7
- ( ) 1/4
- ( ) 2/7
- ( ) 3/8

Question 7

1 / 1 pts

Two fair dice are independently tossed. Let X_1 be the number of dots in the first die, and X_2 be the number of dots in the second die. Let X be the product of X_1 and X_2. What is the probability of X=12?

- ( ) 1/6
- ( ) 5/36

Correct!

- (◉) 1/9
- ( ) 1/12

Question 8

0 / 1 pts

Assume that P(A), P(B) and P(C)>0.

Which of the following is equal to P(A and B and C)? Here "A and B" means the intersection of A and B.

- P(A)P(B|A)P(C|A)
- P(A and B)P(C)

rrect answer

- P(A)P(C|A)P(B|A and C)

ou Answered

- P(A)P(A|B)P(C|A and B)

Question 9

0 / 1 pts

The random variable X has probability density function given by

$f(x) = 5x^k$ if $0<x<1$

$f(x) = 0$ otherwise

What is the value of k?

rrect answer

- 4

ou Answered

- 2

- 3
- 1

Question 10

0 / 1 pts

The random variable X has probability density function given by

$f(x) = 5x^k$ if $0<x<1$

$f(x) = 0$ otherwise.

Since you have computed k in the above question. You can use it to compute P(X>1/2). What is P(X>1/2)?

- 15/16
- 1/32
- ou Answered 9/16
- rrect answer 31/32

Quiz score: **4** out of 10