

Question 1

Complete

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8218665

Question text

Use quantifiers and predicates with more than one variable to express, "There is a student in this class who has taken at least one course in Discrete Maths."

Select one:



A.

$\exists x \forall y P(x, y)$, where $P(x, y)$ is " x has taken y ," the domain for x consists of all student in this class, and the domain for y consists of all Discrete Maths lectures.



B.

$\forall x \forall y P(x, y)$, where $P(x, y)$ is " x has taken y ," the domain for x consists of all student in this class, and the domain for y consists of all Discrete Maths lectures.



C.

$\exists x \exists y P(x, y)$, where $P(x, y)$ is " x has taken y ," the domain for x consists of all student in this class, and the domain for y consists of all Discrete Maths lectures.



D. $\exists x \exists y P(x, y)$, where $P(x, y)$ is " x has taken y ," the domain for x consists of all Discrete Maths lectures, and the domain for y consists of all student in this class.

Question 2

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Question text

Let $P(x)$, $Q(x)$ be the following propositional functions:

$P(x)$ = "Student x passes this test."

$Q(x)$ = "Student x studies hard for this test."

where the domain consists of the students in your class.

Express the following using $P(x)$, $Q(x)$ and logical connectives with quantifier:

"Not all students who passed the test did study hard for it."

Select one:

- ☐ A. $\forall x(P(x) \rightarrow Q(x))$
- ☐ B. $\exists x(\neg P(x) \vee Q(x))$
- ☒ C. $\exists x(P(x) \wedge \neg Q(x))$
- ☐ D. $\forall x(P(x) \wedge \neg Q(x))$

Question 3

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Question text

Let $P(x)$ denote the statement " $x^2 > 4$ ".

Which of these have truth value true?

Select one:

- ☒ A. $P(-3)$
- ☐ B. $P(1)$
- ☐ C. $P(2)$
- ☐ D. $P(0)$

Question 4

Complete

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Question text

In the statement $\forall xP(x)$, \forall is the, x is the and $P(x)$ is the

Select one:

- ☐ A.
Quantifier, predicate, variable
- ☐ B.
Variable, quantifier, predicate



C.

Predicate, variable, quantifier



D.

Quantifier, variable, predicate

Question 5

Complete

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Question text

Determine the truth value of statement $\exists x(-2x = x)$ if the domain consists of all integers.

Select one:



A.

False



B.

True

Question 6

Complete

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Question text

Let $P(x), Q(x)$ be the following propositional functions:

$P(x)$ = "Student x passes this test."

$Q(x)$ = "Student x studies hard for this test."

where the domain consists of the students in your class.

Express the following using $P(x), Q(x)$ and logical connectives with quantifier:

"Not all students will pass the test."

Select one:



A. $\forall x \neg P(x)$



B. $\forall x P(x)$

- ☐ C. $\exists x P(x)$
- ☒ D. $\exists x \neg P(x)$

Question 7

Complete

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Question text

"The sum of two negative real numbers is negative." Is given by?

Select one:

- ☐ A. $\exists x \exists y ((x < 0) \wedge (y < 0) \rightarrow (x + y < 0))$
- ☒ B. $\forall x \forall y ((x < 0) \wedge (y < 0) \rightarrow (x + y < 0))$
- ☐ C. $\exists x \forall y ((x < 0) \wedge (y < 0) \wedge (x + y < 0))$
- ☐ D. $\forall x \exists y ((x < 0) \wedge (y < 0) \wedge (x + y < 0))$

Question 8

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Question text

"Everyone wants to learn mathematic." This argument may be true for which domains?

Select one:

- ☐ A.
Both of the mentioned
- ☐ B.
All students in your mathematic class
- ☒ C.
All the mathematical learning students in the world
- ☐ D.
None of the mentioned

Question 9

Complete

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Question text

Determine the truth value of $\exists n(n^2 < n)$ if the domain consists of all real numbers.

Select one:



A.

True



B.

False

Question 10

Complete

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Question text

Let $Q(x, y)$ denote " $x + y = 0$ ". What is the truth value of the quantifications $\exists y \forall x Q(x, y)$ if the domain consists of all integers.

Select one:



A.

True



B.

False