Question 1

You started this quiz near when it was due, so you won't have the full amount of time to take the quiz.

1 pts

Let

m = “Juan is a math major,”

c = “Juan is a computer science major,”

g = “Juan’s girlfriend is a literature major,”

h = “Juan’s girlfriend has read Hamlet,” and

t = “Juan’s girlfriend has read The Tempest.”

Which of the following expresses the statement “Juan is a computer science major and a math major, but his girlfriend is a literature major who hasn’t read both The Tempest and Hamlet.”

(in this problem ^ is **and**, ˅ is **or**, ~ is **negation**).

- ○ c^ m ^ (g ˅ (~h ˅ ~t))
- ○ c ^ m ^ g ^ (~h ^ ~t)
- ○ c ^ m ^ (g ˅ (~h ^ ~t))
- ○ c ^ m ^ g ^ (h ˅ t)
- ○ c ^ m ^ g ^ (~h ˅ ~t)

Next ▸

Midterm 1

You started this quiz near when it was due, so you won't have the full amount of time to take the quiz.

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 2

1 pts

The function $((p \vee (r \vee q)) \wedge \sim(\sim q \wedge \sim r)$ is equal to the function

- ○ $q \vee r$
- ○ $((p \vee r) \vee q)) \wedge (p \vee r)$
- ○ $(p \wedge q) \vee (p \wedge r)$
- ○ $(p \wedge r) \vee (p \wedge q)$
- ○ $(p \vee q) \wedge \sim(p \vee r)$

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Midterm 1

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

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Question 3 — 1 pts

The Boolean function $[\sim(\sim p \wedge q) \wedge \sim(\sim p \wedge \sim q)] \vee (p \wedge r)$ is equal to the Boolean function

- ○ r
- ○ $p \vee q$
- ○ p
- ○ $p \wedge r$
- ○ q

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Midterm 1

Started: Mar 1 at 10:51am

Quiz Instructions

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Question 4 — 1 pts

Consider the statement, "Either $-2 \le x \le -1$ or $1 \le x \le 2$." The negation of this statement is

- ○ $-2 < x < 2$
- ○ $x < -2$ or $2 < x$
- ○ $x < -2$ or $2 < x$ or $-1 < x < 1$
- ○ $-1 < x < 1$
- ○ $x \le -2$ or $2 \le x$ or $-1 < x < 1$

Next ▸

NOTE: in some answers, the s

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Question 5

1 pts

Which of the following is a negation for "For any integer n, if n is composite, then n is even or $n > 2$."

- There exists an integer n such that if n is not composite, then n is not even and $n \leq 2$.
- For any integer n, if n is composite, then n is not even or $n \leq 2$.
- For any integer n, if n is not composite, then n is not even and $n \leq 2$.
- For any integer n, if n is not composite, then n is not even or $n \leq 2$.
- There exists an integer n such that if n is not composite, then n is not even or $n \leq 2$.
- For any integer n, if n is not composite, then n is not even and $n \leq 2$.
- For any integer n, if n is not composite, then n is even and $n \leq 2$.
- There exists an integer n such that if n is composite, then n is not even and $n \leq 2$.
- There exists an integer n such that n is composite and n is not even and $n \leq 2$.
- There exists an integer n such that n is composite and n is even and $n \leq 2$.

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Midterm 1

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 6 — 1 pts

The product of any two irrational numbers is irrational.

- ○ The statement is true.
- ○ The statement is false.

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Midterm 1

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 7 — 1 pts

Using mathematical induction for all integers $n \geq 3$, $((n - 2)(n\hat{}2 + 2n + 3))/3$ is the solution to

- 2 · 3 + 3 · 4 + · · · + (n -1)•n
- 3 + 3^2 + · · · +3^n
- none of the other answers.
- 3 + 4 + 5 + · · · +n

Next ▸

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Midterm 1

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Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 8 — 1 pts

The simplification of $7^n + 2 \bullet 7^{n-1} + \bullet\bullet\bullet + 2 \bullet 7^2 + 2 \bullet 7 + 2$ is

- 7 ^ 2.5
- (3·7^(n+1)-1)/2
- (2·7^(n+1)-1)/3
- (4·(7^n)-1)/3

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Midterm 1

Started: Mar 1 at 10:51am

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Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 9

1 pts

Define a function f: $\mathbf{R} - \{0\} \rightarrow \mathbf{R}$ by the formula $f(x) = (x + 3)/x$ for all nonzero real numbers x.

- f violets the function definition.
- f is only onto function.
- f is only one-to-one function.
- f is both one-to-one and onto function.
- f is neither one-to-one, nor onto function.

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Midterm 1

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Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 10 — 1 pts

By mathematical induction, the series $1^2 + 2^2 + 3^2 + \ldots + p^2$ can be proved equivalent to

- ○ (p*(p+1)*(2p+1))/6
- ○ (p*(p+1))/4
- ○ None of the other answers.
- ○ $p+p^2$
- ○ $(p^2+2)/7$

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Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 11

1 pts

A teacher offers ten possible assignments for extra credit in a course but requires students to choose them, without looking, from a hat. Six assignments involve library research and four are computer programming exercises. Suppose that a student chooses two assignments, one after the other, at random without replacement. What is the probability that at least one of the assignments is a computer programming exercise?

- ○ 66.7%
- ○ 13.3%
- ○ 33.7%
- ○ 47.3%

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Quiz saved at 11:20am

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Started: Mar 1 at 10:51am

You started this quiz near when it was due, so you won't have the full amount of time to take the quiz.

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 12

1 pts

A screening test for a certain disease is used in a large population of people of whom 1 in 1000 actually has the disease. Suppose that the false positive rate is 1% and the false-negative rate is 0.5%. Thus a person who has the disease tests positive for it 99.5% of the time, and a person who does not have the disease tests negative for it 99% of the time. What is the probability that a randomly chosen person who tests positive for the disease actually has the disease?

- 0.005%
- 6.5%
- 2.8%
- 9%

Next ▸

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Midterm 1

You started this quiz near when it was due, so you won't have the full amount of time to take the quiz.

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 13

1 pts

A certain connected graph has 68 vertices and 72 edges.

- ○ The graph is a tree.
- ○ The graph cannot have more edges than vertices.
- ○ The graph is a tree with some vertices having loops.
- ○ The graph has a circuit

Next ▸

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Quiz Instructions

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Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 14

1 pts

Suppose that a fair coin is tossed ten times.
(a) How many ways can at least eight heads be obtained?

(b) What is the probability of obtaining at least eight heads?

- 56 and 5.5%
- 27 and 2.7%
- 27 and 2.6%
- 8 and 4.5%

Next ▸

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Midterm 1

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 16 — 1 pts

Determine which pairs of statements are equivalent.

1. If Proposition 111 passes, freeways are improved.

2. If Proposition 111 is defeated, freeways are not improved.

3. If the freeways are improved, Proposition 111 passes.

4. If the freeways are not improved, Proposition 111 does not pass.

- ○ 2 and 3
- ○ 2 and 4
- ○ 1 and 3
- ○ 1 and 4

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Midterm 1

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 17 — 1 pts

For all integers a, b, and c, if $a \mid b$ and $a \mid c$, then $a \mid (5b + 3c)$.

- ○ False
- ○ True

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Midterm 1

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 18 — 1 pts

Which of the following sequences in the Geometric sequence will have a common ratio of 3, where n is an Integer?

- $g_n = 3n^2 + 3n$
- None of the other answers
- $g_n = 2n^2 + 3$
- $g_n = 2n^2 + 3n$
- $g_n = 6(3^{n-1})$

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Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 19

1 pts

A personal computer manufacturer buys 38% of its chips from Japan and the rest from America. 1.7% of the Japanese chips are defective, and 1.1% of the American chips are defective.

a. Find the probability that a chip is defective and made in Japan.

b. Find the probability that a chip is defective.

- ○ 0.121 and 0.0065
- ○ .0 2 and 0.0012
- ○ 0.006 and 0.0283
- ○ 0.00646 and 0.01328

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Quiz saved at 11:37am

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Midterm 1

Started: Mar 1 at 10:51am

Quiz Instructions

Please answer all questions. Good luck!

NOTE: in some answers, the symbol ^ is used to indicate power. For example 2^ 3 =8.

Question 20 — 1 pts

For the given Arithmetic sequence find the first negative term.

50, 47, 44, 41,.....

- ○ None of the other answers
- ○ -2
- ○ -14
- ◉ -1
- ○ -3

Quiz saved at 11:41am

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