GS1001 Calculus I Spring 2019

Test-00 (100 problems, 200 points) not to submit

For self-test and self-evaluation. For solution problems, 2 points (unless otherwise stated); for multiple choice problems, 2 points for right answer, 0 points for no answer, −1 point for wrong answer.

If you score < 60% (120 points), it means you are very unprepared and must recover your missing English/math skills by yourself. You can see the solution from a TA later, but we cannot check each one's sheet, and I have no time to discuss and teach all material in class.

Problem 1. Assume you are 박길동. How should you write your name in English?

☐ Park, gildong ☐ Girdong Park ☐ Girdong park ☐ girdong, Park

Problem 2. One billion kilometers are 10^m centimeters for what m? _____

Problem 3. What unit is sound measured in?

☐ Watt per meter ☐ Joule

☐ Decibel ☐ Richter magnitude

Problem 4. Among the first 100 elements in the periodic table, how many are in the first period?

☐ 2 ☐ 6 ☐ 7 ☐ 8

Problem 5. What is an asterisk?

☐ $*$ ☐ $\vdash$ ☐ $\widehat{\ }$ ☐ $\sim$

Problem 6. What is an angle bracket?

☐ [☐ { ☐ (☐ $\langle$

Problem 7. What mathematical operation is denoted by an exclamation mark?

☐ factorial ☐ fraction ☐ greatest integer ☐ logarithm

Problem 8. What means $\forall$?

☐ intersection ☐ negation ☐ for all ☐ proper inclusion

Problem 9. What means that A is disjoint from B?

☐ $A \subseteq B$ ☐ $A \setminus B \neq \varnothing$ ☐ $A \cap B = \varnothing$ ☐ $B \setminus A = \varnothing$

Problem 10. What denotes $\mathbb{Q}$?

☐ integers ☐ rational numbers ☐ real numbers ☐ natural numbers

Problem 11. How does one call the statement '$P \Longrightarrow Q$'?

☐ inclusion ☐ implication ☐ conclusion ☐ assertion

Problem 12. What is the contrapositive of the statement '$P \Longrightarrow Q$'?

☐ not $P \Longrightarrow$ not Q ☐ $P \Longrightarrow$ not Q ☐ $Q \Longrightarrow$ not P ☐ not $Q \Longrightarrow$ not P

Problem 13. When is '$A \Longrightarrow B$' false?

☐ when A is false ☐ when A, B are false

☐ when A is true and B is false ☐ when B is false

Problem 14. What of the following statements is not true for the ordering relation $<$ on $\mathbb{R}$?

☐ $\forall x, y \in \mathbb{R}\, \exists z \in \mathbb{R} : x < z$ or $z < y$

☐ $\forall x, y \in \mathbb{R} : (\forall z \in \mathbb{R} : z > y \Longrightarrow z > x) \Longrightarrow y > x$

☐ $\forall x, y \in \mathbb{R} : (x < y \Longrightarrow \exists z \in \mathbb{R} : x < z$ and $z < y)$

☐ $\forall x, y \in \mathbb{R}\, \exists z \in \mathbb{R} : z > x$ and $z > y$

Problem 15. What of the following statements is false?

☐ $(A \Longrightarrow (B$ and $C)) \iff ((A \Longrightarrow B)$ and $(A \Longrightarrow C))$

☐ $((B$ and $C) \Longrightarrow A) \iff ((B \Longrightarrow A)$ or $(C \Longrightarrow A))$

☐ $((B$ or $C) \iff A) \iff ((B \iff A)$ or $(C \iff A))$

☐ $(A \Longrightarrow (B$ or $C)) \iff ((A \Longrightarrow B)$ or $(A \Longrightarrow C))$

Problem 16. Negate the quantified expression $\exists A \subset \mathbb{R}\, \forall \varepsilon > 0\, \exists N\, \forall n \geq N : (x_n, \infty) \subset A$

Problem 17. For what set $A \subset \mathbb{R}$ is the statement true $\forall x \in A\, \exists \varepsilon > 0 : (x - \varepsilon, a) \cap \mathbb{Z} = \varnothing$?

☐ $\mathbb{Z}$ ☐ $\mathbb{Q}$ ☐ $\varnothing$ ☐ $\mathbb{R}$

Problem 18. What is the English name for 평행육면체?

☐ prism ☐ parallelepiped ☐ cylinder ☐ pyramid

Problem 19. Under which of the following conditions is $[a, b] \cap (c, d] = \varnothing$?

☐ $d \leq a$ ☐ $b \leq c$ ☐ $a < d$ ☐ $b < d$

Problem 20. Which of the following functions does not give a rational number $f(x)$ for each natural number x?

☐ $\dfrac{1}{\frac{1}{2} + x}$ ☐ $\dfrac{1}{2 + x}$ ☐ $\left(\dfrac{1}{2}\right)^x$ ☐ $x^{1/2}$

Problem 21. What is an example of associativity property?

☐ $a + (b + c) = (a + b) + c$ ☐ $(a + b)c = ac + bc$

☐ if $a \leq b$ and $c \geq 0$, then $ac \leq bc$ ☐ if $a \leq b$ and $b \leq c$, then $a \leq c$

Problem 22. Which of the below functions (on their maximal domain) is not increasing?

☐ $x^3 - 1$ ☐ $x^3 - \dfrac{1}{x}$ ☐ $\ln\left(-\dfrac{1}{x}\right)$ ☐ $\sqrt{-\dfrac{1}{x}}$

Problem 23. How many coordinate axes does the coordinate plane have?

☐ 1 ☐ 2 ☐ 4 ☐ ∞

Problem 24. What does it mean that A is contained in B?

☐ If A, then B ☐ A is an element in B

☐ A has smaller norm than B ☐ Every element in A is an element in B

Problem 25. What condition on a function $f : A \to B$ means f to be injective?

☐ the range of f is equal to B ☐ the domain of f is equal to B

☐ f is not bijective ☐ if $f(x) = f(y)$ for $x, y \in A$, then $x = y$

Problem 26. Which of the following functions is well-defined over the domain $\mathbb{R}$?

☐ $f(x) = \dfrac{1}{\sqrt{-x^2 + 1}}$ ☐ $f(x) = \dfrac{1}{\sqrt{x^2 + 1}}$

☐ $f(x) = \dfrac{1}{x^2 - 1}$ ☐ $f(x) = \dfrac{1}{-x^2 + 1}$

Problem 27. Which of the following functions f is equal to $g(x) = x - 3$? (We assume functions are defined on their maximal domains.)

☐ $f(x) = \dfrac{(x-3)^2}{x-3}$ ☐ $f(x) = \dfrac{(x-3)(x^2+3)}{x^2+3}$

☐ $f(x) = \sqrt{x-3}^2$ ☐ $f(x) = \sqrt{(x-3)^2}$

Problem 28. What of the following claims is false (we assume f is defined on $\mathbb{R}$)?

☐ $f(x) = \sin x$ is an odd function ☐ $f(x) = \cos x$ is an even function

☐ $f(x) = 4x^3$ is an even function ☐ $f(x) = 3x^4$ is an even function

Problem 29. Consider a function $f : A \to B$ and a function g defined by $g(x) = f(x+a)$ for $a > 0$. Then the graph of g is obtained from the graph of f by

☐ moving a to the left ☐ moving a to the right

☐ moving a up ☐ moving a down

Problem 30. A function is called *monotonous* iff it is increasing or decreasing. Which of the following is true?

☐ Every monotonous function defined on $\mathbb{R}$ is surjective.

☐ Every injective function defined on $\mathbb{R}$ is continuous or monotonous.

☐ Every injective function defined on an interval is monotonous.

☐ Every injective continuous function defined on $\mathbb{R}$ is monotonous.

Problem 31. The line of which function $g(x)$ is orthogonal to the line of $f(x) = 3x + 1$?

☐ $g(x) = 3x - 1$ ☐ $g(x) = -\dfrac{1}{3}x + 1$ ☐ $g(x) = -x + 3$ ☐ $g(x) = \dfrac{1}{3}x - 1$

Problem 32. A linear polynomial is one of degree

☐ -1 ☐ 0 ☐ 1 ☐ 2

Problem 33. The equation $ax^2 + bx + c = 0$ has no real roots when

☐ the discriminant $b^2 + 4ac$ is positive ☐ the discriminant $b - 4ac$ is zero

☐ the discriminant $b^2 - ac$ is negative ☐ the discriminant $b^2 - 4ac$ is negative

Problem 34. What is the graph of a linear function?

☐ a parabola ☐ a horizontal line

☐ a vertical line ☐ a non-horizontal non-vertical line

Problem 35. The polynomial $(x-3)(x-2)(x-1)(x^2+4)^2$ has

- ☐ degree 7 and 2 zeros
- ☐ degree 5 and 2 zeros
- ☐ degree 2 and 3 zeros
- ☐ degree 7 and 3 zeros

Problem 36. Let p and q be arbitrary non-zero polynomials. Which of the following inequalities is always true?

- ☐ $\deg(p-q) \leq \deg p + \deg q$
- ☐ $\deg(p-q) \leq \deg p - \deg q$
- ☐ $\deg(p \cdot q) \leq \deg p \cdot \deg q$
- ☐ $\deg(p \cdot q) \geq \deg p \cdot \deg q$

Problem 37. For what type of asymptote can a rational function have more than one asymptote of this type?

- ☐ A horizontal line
- ☐ A vertical line
- ☐ A non-horizontal non-vertical line
- ☐ A parabola

Problem 38. What of the following claims is true?

- ☐ Any polynomial of odd degree has at east one multiple zero.
- ☐ Any polynomial has at most as many zeros as its degree.
- ☐ The number of distinct zeros of a polynomial is equal to its degree.
- ☐ Any polynomial of even degree has an even number of distinct zeros.

Problem 39. What is a pole of a rational function $f(x) = \dfrac{p(x)}{q(x)}$?

- ☐ an x with $p(x) = 0$ and $q(x) \neq 0$
- ☐ an x where $f(x)$ is not continuous
- ☐ a singularity x which is not removable
- ☐ an x with $p(x) = 0$ and $q(x) = 0$

Problem 40. What is the maximal number of poles a rational function $f(x) = \dfrac{p(x)}{q(x)}$ can have?

- ☐ $\deg p - \deg q - 1$
- ☐ $\deg q$
- ☐ $\deg p - 1$
- ☐ $\deg p + 1$

Problem 41. When x is an arbitrary integer, for which numbers b is b^x defined?

- ☐ all real numbers b
- ☐ all rational numbers $b \geq 0$
- ☐ all real numbers $b \neq 0$
- ☐ all real numbers $b > 0$

Problem 42. What is the inverse function to $f(x) = m^x$ (for $m > 0$)?

- ☐ $f^{-1}(x) = \log_m x$
- ☐ $f^{-1}(x) = (-x)^m$
- ☐ $f^{-1}(x) = \log_x m$
- ☐ $f^{-1}(x) = x^{1/m}$

Problem 43. Which of the following sets is the union of two disjoint open intervals?

☐ $\{\, x \in \mathbb{R} : x^2 + 2x + 1 \geq 2 \,\}$ ☐ $\{\, x \in \mathbb{R} : x^2 - 2x - 1 > -2 \,\}$

☐ $\{\, x \in \mathbb{R} : -x^2 + 2x - 1 > -2 \,\}$ ☐ $\{\, x \in \mathbb{R} : -x^2 - 2x + 1 \geq 2 \,\}$

Problem 44. For what real numbers b exactly is $\log_b$ defined?

☐ $b > 0$ ☐ $b > 0$ and $b \neq 1$ ☐ $b > 1$ ☐ $b \geq 0$ and $b < 1$

Problem 45. When $h > 0$ is small, what is e^h approximately equal to?

☐ $1 + h$ ☐ $1 + \ln h$ ☐ h^2 ☐ e

Problem 46. Consider an equation of the sort

$$ax^2 + bx + cy^2 + dy + e = 0\,,$$

where a, b, c, d, and e are arbitrary real numbers. What of the below sets in $\mathbb{R}^2$ cannot be described by such an equation?

☐ a circle ☐ a parabola ☐ a lemniscate ☐ a vertical line

Problem 47. When $\alpha \in \left(\pi, \frac{3\pi}{2}\right)$, then

☐ $\cos\alpha > 0$ and $\sin\alpha > 0$ ☐ $\cos\alpha < 0$ and $\sin\alpha > 0$

☐ $\cos\alpha > 0$ and $\sin\alpha < 0$ ☐ $\cos\alpha < 0$ and $\sin\alpha < 0$

Problem 48. What is the minimal period of $f(x) = \cos^2(2x)$?

☐ $\frac{\pi^2}{4}$ ☐ $\frac{\pi}{2}$ ☐ $-\pi^2$ ☐ 2π

Problem 49. What is a radian?

☐ the perimeter of the unit circle

☐ the maximal distance between two points on a circle

☐ the distance between a point on a circle and the center of the circle

☐ a unit to measure angles

Problem 50. Assume for $f : \mathbb{R} \to \mathbb{R}$ we have $f(x - 3) = -f(x + 3)$ for all $x \in \mathbb{R}$. What can you say about f?

☐ f is odd ☐ f has a zero ☐ f is surjective ☐ f is periodic

Problem 51. What of the following is an expression for $\tan x$?

☐ $\pm\dfrac{\sqrt{1-\cos^2 x}}{\cos x}$ ☐ $\pm\dfrac{\sqrt{\sin^2 x-1}}{\sin x}$ ☐ $\pm\dfrac{\sin x}{\sqrt{1-\cos^2 x}}$ ☐ $\pm\dfrac{\cos x}{\sqrt{1-\sin^2 x}}$

Problem 52. What is the below?

$$-+--+-+++-+-+-++++--+$$

☐ the Raw of Sins ☐ the Law of Sines ☐ a Row of Signs ☐ a Low of Sighs

Problem 53. When is a triangle acute?

☐ when the incenter lies inside the triangle

☐ when the incenter lies outside the triangle

☐ when the centroid lies outside the triangle

☐ when the orthocenter lies inside the triangle

Problem 54. Which lines in a triangle always intersect in ratio 2:1?

☐ angle bisectors ☐ medians ☐ edge bisectors ☐ heights

Problem 55. Assume $\{a_n\}$ is a real sequence and $a_n > 0$. If the series of $\{a_n\}$ converges, and $\{a_n\}$ is among the below four types of sequence, which type is it?

☐ arithmetic progression ☐ geometric progression

☐ increasing sequence ☐ periodic sequence

Problem 56. What of the following conditions for $O \subset \mathbb{R}$ means that $\overline{O} \neq \mathbb{R}$ (where bar denotes closure)?

☐ $\forall x \in O\, \exists a, b \in \mathbb{R} : a < x < b,\ (a, b) \subset O$

☐ $\exists x \in O\, \forall \varepsilon > 0 : (x-\varepsilon, x+\varepsilon) \not\subset O$

☐ $\forall x \in O\, \forall \varepsilon > 0 : (x-\varepsilon, \infty) \subset O$

☐ $\exists x \in \mathbb{R}\, \exists \varepsilon > 0 : (x-\varepsilon, x+\varepsilon) \cap O = \varnothing$

Problem 57. What of the following conditions means that the sequence $(x_n) \subset \mathbb{R}$ is unbounded above?

☐ $\forall N\, \exists n \geq N : x_n > n$ ☐ $\forall N\, \exists n \geq N : x_n \geq N$

☐ $\forall N\, \forall n \geq N : x_n \geq N$ ☐ $\exists N\, \forall n \geq N : x_n \geq N$

Problem 58. For $A \subset \mathbb{R}$, what does the below condition define $x \in \mathbb{R}$ to be?

$$\forall a \in A : a \leq x \text{ and } \forall z \in \mathbb{R} : ((\forall a \in A : a \leq z) \Longrightarrow z \geq x) \ ?$$

☐ supremum ☐ minimum ☐ boundary point ☐ upper bound

Problem 59. $A \subsetneq B$ is equivalent to?

☐ $\forall a : ((a \in A \Longrightarrow a \in B) \text{ and not } (a \in B \Longrightarrow a \in A))$

☐ $(\forall a : (a \in A \Longrightarrow a \in B)) \text{ and not } (\forall a : (a \in B \Longrightarrow a \in A))$

☐ $\forall a : ((a \in A \Longrightarrow a \in B) \text{ and } (a \notin B \Longrightarrow a \in A))$

☐ $\exists a : ((a \in A \Longrightarrow a \in B) \text{ and not } (a \in B \Longrightarrow a \in A))$

Problem 60. What is the character "." *not*?

☐ a full stop ☐ a punctuation mark

☐ a period ☐ a hyphenation symbol

Problem 61. What is the word "herself"?

☐ a reflexive pronoun ☐ an object form of a pronoun

☐ a preposition ☐ a conjunction

Problem 62. Which of the following articles is not written correctly?

☐ an hour ☐ an uniform ☐ a university ☐ the heritage

Problem 63. Which of the following sentences is written correctly?

☐ This is my book, and that is yours. ☐ This is mine book, and that is yours'.

☐ This is my book and that is your's. ☐ This is my book, and that is your.

Problem 64. Which of the following sentences is written correctly?

☐ This is a picture by a painter P. Picasso, who created it in 1960.

☐ This is a picture by the painter, P. Picasso who created it in 1960.

☐ This is a picture by a painter P. Picasso who created it in 1960.

☐ This is a picture by the painter P. Picasso, who created it in 1960.

Problem 65. Which of the following sentences is written correctly?

- ☐ His mother Jane lives in the States.
- ☐ He's mother Jane; lives in the States.
- ☐ His mother, Jane lives in the States.
- ☐ He's mother, Jane, lives in the States.

Problem 66. Which of the following sentences is written best?

- ☐ The goods (packed in boxes) were brought by the driver.
- ☐ (Packed in boxes) the goods were brought by the driver.
- ☐ The driver (packed in boxes) brought the goods.
- ☐ The driver brought the (packed in boxes) goods.

Problem 67. Which of the following sentences is written correctly?

- ☐ I had little experience and, could not solve the problem.
- ☐ I had little experience I could not solve the problem.
- ☐ I had little experience, and I could not solve the problem.
- ☐ I had little experience; and so could not solve the problem.

Problem 68. Which of the following sentences is written correctly?

- ☐ Whom needs it can see this document.
- ☐ Show this document to whom needs it.
- ☐ Show this document to whoever needs it.
- ☐ Whomever needs this document can see it.

Problem 69. Which of the following sentences is written correctly?

- ☐ He is one of a student, who never attend class.
- ☐ He is one of the students who never attend class.
- ☐ He is one among several students who never attends class.
- ☐ He is among the students, who never attend class.

Problem 70. Which of the following sentences is written correctly?

- ☐ Nobody are perfect.
- ☐ None of us is perfect.
- ☐ None of we is perfect.
- ☐ Nobody of we are perfect.

Problem 71. Which of the following sentences is not written and meant correctly?

- ☐ Decayed and badly smelling, the shop owner threw out the fruits.
- ☐ Since they were decayed and badly smelling, the shop owner threw out the fruits.
- ☐ The shop owner threw out the fruits, decayed and badly smelling.
- ☐ Decayed and badly smelling, the fruits were thrown out by the shop owner.

Problem 72. Which of the following sentences is written and meant correctly?

- ☐ Let us show that f_n is continuous, then Theorem 3 states that this is true when $n \geq 3$.
- ☐ If we want to show that f_n is continuous, Theorem 3 states that this is true when $n \geq 3$.
- ☐ Wanting to show that f_n is continuous, Theorem 3 can be applied, which states that this is true when $n \geq 3$.
- ☐ To show that f_n is continuous, we apply Theorem 3, which states that this is true when $n \geq 3$.

Problem 73. What among the below four is a correct letter opening?

☐ Dear Paul? ☐ Dear Paul, ☐ Dear Paul; ☐ Dear Paul-

Problem 74. What of the following characters is a closing delimiter?

☐ (☐] ☐ ” ☐ .

Problem 75. What of the following words is *not* a preposition?

☐ for ☐ without ☐ if ☐ from

Problem 76. Which of the following sentences is written correctly?

- ☐ He was famous; and many admired him.
- ☐ He was famous; and therefore, many admired him.
- ☐ He was famous, therefore, many admired him.
- ☐ He was famous; many admired him.

Problem 77. In the sentence ‘It was seeable from the beginning that the problem is hard to solve’, the word ‘seeable’ can better be replaced by any of three of the below words. Which word should ‘seeable’ *not* be replaced with?

☐ observable ☐ apparent ☐ evident ☐ watchable

Problem 78. How should one abbreviate the name Vaughan Frederick Randal Jones?

☐ VFR. Jones ☐ V.F.R. Jones ☐ V. F.R.Jones ☐ V. F. R.Jones

Problem 79. Which of the following sentences is written and meant correctly?

☐ The delivery involves the driver.
☐ The delivery constitutes the driver.
☐ The delivery comprises the driver.
☐ The delivery contains the driver.

Problem 80. Which of the following sentences is written and meant correctly?

☐ Comparing x to y, we find that x is equal with y.
☐ Comparing x to y, we find that x is equal to y.
☐ Comparing x with y, we find that x is equal with y.
☐ Comparing x with y, we find that x is equal to y.

Problem 81. Which of the following sentences is written and meant correctly?

☐ The root effects in the convergence of the algorithm.
☐ The root has an affect for the convergence of the algorithm.
☐ The root has an effect on the convergence of the algorithm.
☐ The root effect for the convergence of the algorithm.

Problem 82. Which of the following sentences is written correctly?

☐ Leave this problem to solve by others.
☐ Let this problem to solve by others.
☐ Let this problem be solved by others.
☐ Left this problem solved by others.

Problem 83. Let A, $B \subset \mathbb{R}$. What sentence expresses the condition $\forall a \in A, b \in B : \ a < b$?

☐ Every element in A is fewer than any element in B.
☐ The set A have fewer elements in B.
☐ The set A has less elements than B.
☐ An element in A is less than every element in B.

Problem 84. Which of the following phrases is written correctly?

- ☐ If $n = 3$, the equation is easy to solve. Otherwise, further work is needed.
- ☐ If $n = 3$, the equation is easy to solve. Or else, farther work is needed.
- ☐ If $n = 3$. Then the equation is easy to solve, else farther work is needed.
- ☐ If $n = 3$, then the equation is easy to solve. Else, more work is needed.

Problem 85. Which of the following sentences is written correctly?

- ☐ He cannot play neither well soccer nor tennis.
- ☐ Neither can he play well soccer, nor can he play well tennis.
- ☐ He can neither play well soccer nor tennis.
- ☐ He cannot play well soccer nor tennis.

Problem 86. Which of the following sentences is written and meant correctly?

- ☐ I am satisfied that x verified the fix point condition.
- ☐ I satisfied that x verifies the fix point condition.
- ☐ I verified that x satisfies the fix point condition.
- ☐ I verified that x is satisfied with the fix point condition.

Problem 87. Which of the following sentences is written and meant correctly?

- ☐ Consider the matrix, who is positive definite.
- ☐ Consider the matrix that is positive definite.
- ☐ Consider a matrix, which is positive definite.
- ☐ Consider a matrix, that is, positive definite.

Problem 88. Which of the following sentences is written correctly?

- ☐ This result is different than what we expected.
- ☐ This result is something else from what we expected.
- ☐ This result is other then what we expected.
- ☐ This result is different from what we expected.

Problem 89. Which of the following sentences is written wrongly?

- ☐ Inside the conference, a special lecture is contained.
- ☐ In the conference, a special lecture is included.
- ☐ During the conference, a special lecture is scheduled.
- ☐ Within the conference, a special lecture is included.

Problem 90. How can one read "a^2"?

☐ "a up two" ☐ "a two power" ☐ "square two a" ☐ "a squared"

Problem 91. What is the meaning of the prefix "pro-"?

☐ in favor of ☐ before ☐ a kind of ☐ backward

Problem 92. What of the following is an acronym?

☐ J.-P. Serre ☐ PDE ☐ iff ☐ e.g.

Problem 93. What is a corollary?

- ☐ A main result of a chapter of the book
- ☐ A technical statement needed in the proof of a theorem.
- ☐ A consequence of a theorem with a short proof.
- ☐ A historical comment in the introduction of a mathematical book.

Problem 94. What is the difference between an equation and an equality?

- ☐ An equation defines a symbol, and an equality uses it.
- ☐ An equation stands in a theorem, and an equality in a definition.
- ☐ An equality is true for all values of the variables, and an equation only for some.
- ☐ There is no difference; both mean the same.

Problem 95. The phrase "The next step is to show..." is most useful in the

☐ definition of a symbol ☐ title

☐ statement of a theorem ☐ proof of a theorem

Problem 96. What of the following expressions is written well?

☐ For many xs and ys there is no solution.

☐ For many x's and y's there is no solution.

☐ For many $x - s$ and $y - s$ there is no solution.

☐ For many numbers x and y there is no solution.

Problem 97. Which of the following sentences is written and meant correctly?

☐ I came here with some body.

☐ I came hear with some body.

☐ I came herewith somebody.

☐ I came here with somebody.

Problem 98. Why did Nobel not create a prize in mathematics? - 노벨이 수학상을 안 만든 이유는?

☐ because Euclid stole his calculator - 유클리드가 그의 계산기를 훔친 탓에

☐ because he didn't like Stuart's calculus textbook - Stuart 미분적분교과서가 마음에 안 든 탓에

☐ because his wife had an affair with a mathematician - 아내가 수학자랑 불륜관계를 가진 탓에

☐ because he saw Gauss cheating during his algebra exam - 대수학시험 때 가우스가 부정행위하는 것을 본 탓에

Problem 99. What is not a good way of nesting delimiters (of the same size) in a formula?

☐ { [( )] }

☐ { [ ] ( ) }

☐ [{ ( ) }]

☐ [[ ] ( )]

Problem 100. Where should the symbol '×' be used for multiplication in a formula?

☐ in the title

☐ in a definition

☐ at a line break

☐ at the end of a paragraph