The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

SPANISH EDITION
MATHEMATICS A
THURSDAY, JANUARY 25, 2007
1:15 TO 4:15 p.m., ONLY

MATEMÁTICAS A

Jueves, 25 de enero de 2007 — 1:15 a 4:15 p.m., solamente

Escriba su nombre en letras de molde:

Escriba el nombre de su escuela en letras de molde:

Escriba su nombre y el nombre de su escuela en los recuadros de arriba en letras de molde. Después, pase a la última página de este folleto, que es la hoja de respuestas para la Parte I. Doble la última página a lo largo de las perforaciones y, lenta y cuidadosamente, desprenda la hoja de respuestas. Después rellene el encabezamiento de su hoja de respuestas.

No se permite papel de borrador para ninguna parte de este examen, pero usted puede usar los espacios en blanco en este folleto como papel de borrador. Una hoja perforada de papel de borrador cuadriculado está provista al final de este folleto para cualquier pregunta para la cual sea útil un gráfico aunque no se requiere. Usted puede remover esta hoja del folleto. Cualquier trabajo que se realice en esta hoja de papel de borrador cuadriculado no será calificado. Todo el trabajo debe realizarse con bolígrafo, menos los gráficos y los dibujos, los cuales deben realizarse con lápiz.

Este examen contiene cuatro partes, con un total de 39 preguntas. Usted debe contestar todas las preguntas de este examen. Escriba sus respuestas para las preguntas de selección múltiple de la Parte I en la hoja separada de respuestas. Escriba sus respuestas a las preguntas de las Partes II, III, y IV en este mismo folleto. Indique claramente los pasos necesarios que usted seguirá, incluyendo las sustituciones apropriadas de fórmulas, diagramas, gráficos, tablas, etc.

Cuando usted haya terminado el examen, debe firmar la declaración impresa al final de la hoja de respuestas, indicando que usted no tenía ningún conocimiento ilegal de las preguntas o de las respuestas antes del examen y que no ha dado ni ha recibido ayuda en contestar ninguna de las preguntas durante el examen. Su hoja de respuestas no puede ser aceptada si usted no firma esta declaración.

Aviso. . .

Un mínimo de una calculadora científica, una regla y un compás tienen que estar disponibles para su uso mientras toma este examen.

El uso de cualquier aparato destinado a la comunicación está estrictamente prohibido mientras esté realizando el examen. Si usted utiliza cualquier aparato destinado a la comunicación, aunque sea brevemente, su examen será invalidado y no se calculará su calificación.

NO ABRA ESTE FOLLETO DE EXAMINACIÓN HASTA QUE SE LE INDIQUE.

Parte I

Conteste todas las preguntas en esta parte. Cada respuesta correcta recibirá 2 puntos. No se dará crédito parcial. Para cada pregunta, escriba en la hoja separada de respuestas, el número que precede a la palabra o expresión que completa mejor la afirmación o que contesta mejor a la pregunta. [60]

Utilice este espacio para sus cálculos.

1 ¿Qué imagen representa una línea de reflexión?

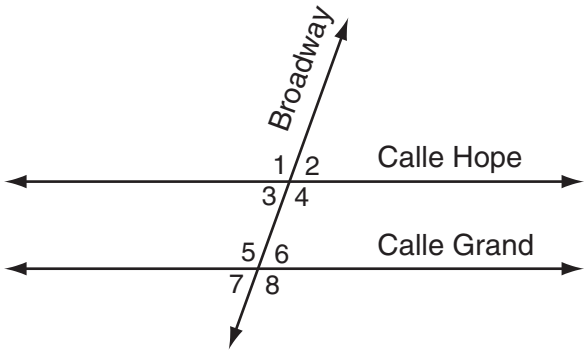
(1) P P

(2) P P

(3) P P

(4) P P

2 El siguiente diagrama muestra dos vías paralelas, la calle Hope y la calle Grand, atravesadas por una vía transversal, Broadway.

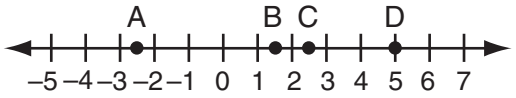


Si m∠1 = 110, ¿cuál es la medida de ∠7?

(1) 40°
(2) 70°
(3) 110°
(4) 180°

Utilice este espacio para sus cálculos.

3 ¿Qué punto en la siguiente línea numérica representa mejor la posición de $\sqrt{5}$?



(1) *A*
(2) *B*
(3) *C*
(4) *D*

4 La base de un triángulo isósceles es 5 y su perímetro es 11. La base de un triángulo isósceles similar es 10. ¿Cuál es el perímetro del triángulo más grande?

(1) 15
(2) 21
(3) 22
(4) 110

5 ¿Cuál es el valor de n en la ecuación $3n - 8 = 32 - n$?

(1) –10
(2) –6
(3) 6
(4) 10

6 El enunciado "$x \geq 4$ y $2x - 4 < 6$" es verdadero cuando x es igual a

(1) 1
(2) 10
(3) 5
(4) 4

7 La expresión $(2x^2 + 6x + 5) - (6x^2 + 3x + 5)$ es equivalente a

(1) $-4x^2 + 3x$
(2) $4x^2 - 3x$
(3) $-4x^2 - 3x + 10$
(4) $4x^2 + 3x - 10$

Utilice este espacio para sus cálculos.

8 ¿Qué ecuación representa la relación de la variación directa de la ecuación $\frac{x}{y} = \frac{1}{2}$?

(1) $y = x + \frac{1}{2}$

(2) $y = 2x$

(3) $y = 3x$

(4) $x = 2y$

9 Seth lanzó una moneda al aire cinco veces y obtuvo cinco caras. La probabilidad de que le salga una cruz la próxima vez que lance la moneda es

(1) 0

(2) $\frac{1}{6}$

(3) $\frac{5}{6}$

(4) $\frac{1}{2}$

10 La fórmula para la energía potencial es $P = mgh$, donde P es la energía potencial, m es la masa, g es la gravedad y h es la altura. ¿Qué expresión puede utilizarse para representar a g?

(1) $P - m - h$

(2) $P - mh$

(3) $\frac{P}{m} - h$

(4) $\frac{P}{mh}$

11 Se había proyectado un edificio de 100 pies de longitud, 75 pies de profundidad y 30 pies de altura. El propietario decide aumentar el volumen del edificio en un 10% sin cambiar las dimensiones de la profundidad ni de la altura. ¿Cuál será la nueva longitud de este edificio?

(1) 106 pies

(2) 108 pies

(3) 110 pies

(4) 112 pies

Utilice este espacio para sus cálculos.

12 ¿Qué expresión representa el producto de dos enteros impares consecutivos, en que n es un entero impar?

(1) $n(n + 1)$
(2) $n(n + 2)$
(3) $n(n + 3)$
(4) $2n + 1$

13 ¿Qué valor es equivalente a ${}_3P_3$?

(1) 1
(2) 9
(3) 3!
(4) 27

14 El gráfico de la ecuación $x^2 + y^2 = r^2$ forma

(1) un círculo
(2) una parábola
(3) una línea recta
(4) dos líneas que se intersectan

15 ¿Cuál es el inverso de la afirmación "Si Bob se lastima, entonces el equipo pierde el partido"?

(1) Si el equipo pierde el partido, entonces Bob se lastima.
(2) Bob se lastima si el equipo pierde el partido.
(3) Si el equipo no pierde el partido, entonces Bob no se lastima.
(4) Si Bob no se lastima, entonces el equipo no pierde el partido.

16 ¿Qué expresión es indefinida cuando $w = 3$?

(1) $\frac{w - 3}{w + 1}$
(2) $\frac{w^2 + 2w}{5w}$
(3) $\frac{w + 1}{w^2 - 3w}$
(4) $\frac{3w}{3w^2}$

Utilice este espacio para sus cálculos.

17 Un jardín circular tiene un diámetro de 12 pies. ¿Cuántas bolsas de capa superficial de tierra tiene que comprar Linda para cubrir el jardín si una bolsa cubre un área de 3 pies cuadrados?

(1) 13
(2) 38
(3) 40
(4) 151

18 El punto medio de $\overline{AB}$ es (–1,5) y las coordenadas del punto *A* son (–3,2). ¿Cuáles son las coordenadas del punto *B*?

(1) (1,8)
(2) (1,10)
(3) (0,7)
(4) (–5,8)

19 ¿Cuál es el valor de *x* en la ecuación $\frac{x}{2} + \frac{x}{6} = 2$?

(1) 12
(2) 8
(3) 3
(4) $\frac{1}{4}$

20 Si *M* y A representan enteros, ¿$M + A = A + M$ es un ejemplo de qué propiedad?

(1) conmutativa
(2) asociativa
(3) distributiva
(4) clausura

21 Un grupo de cinco cuadriláteros está compuesto por un cuadrado, un rombo, un rectángulo, un trapezoide isósceles y un paralelogramo. Lu escoge al azar una de estas figuras. ¿Cuál es la probabilidad de que ambos pares de los lados opuestos de la figura sean paralelos?

(1) 1
(2) $\frac{4}{5}$
(3) $\frac{3}{4}$
(4) $\frac{2}{5}$

Utilice este espacio para sus cálculos.

22 Si las medidas de los ángulos de un triángulo están representadas por $2x$, $3x - 15$, y $7x + 15$, el triángulo es

(1) un triángulo isósceles
(2) un triángulo recto
(3) un triángulo agudo
(4) un triángulo equiangular

23 ¿Cuál es el valor de $3^0 + 3^{-2}$?

(1) 0
(2) $\frac{1}{9}$
(3) $1\frac{1}{9}$
(4) 6

24 La expresión $(50x^3 - 60x^2 + 10x) \div 10x$ es equivalente a

(1) $5x^2 - 6x + 1$
(2) $5x^3 - 6x^2 + x$
(3) $5x^2 - 60x^2 + 10x$
(4) $5x^2 - 6x$

25 La imagen del punto A después de una expansión de 3 es (6,15). ¿Cuál era la ubicación original del punto A?

(1) (2,5)
(2) (3,12)
(3) (9,18)
(4) (18,45)

26 Mario pagó $44.25 por un taxi desde el hotel hasta el aeropuerto. El taxi cobró $2.25 por la primera milla, más $3.50 por cada milla adicional. ¿Cuántas millas se recorrieron desde el hotel hasta el aeropuerto?

(1) 10
(2) 11
(3) 12
(4) 13

Utilice este espacio para sus cálculos.

27 ¿Cuál es el conjunto solución de la ecuación $x^2 - 5x = 0$?

(1) {0,–5}
(2) {0,5}
(3) {0}
(4) {5}

28 La expresión $(6x^3y^6)^2$ es equivalente a

(1) $36x^6y^{12}$
(2) $36x^5y^8$
(3) $12x^6y^{12}$
(4) $6x^6y^{12}$

29 Si el Club Olímpico de Matemáticas está compuesto por dieciocho estudiantes, ¿cuántos equipos diferentes de cuatro estudiantes pueden formarse para las competencias?

(1) 66
(2) 72
(3) 3,060
(4) 73,440

30 El inverso multiplicativo de $-\frac{1}{3}$ es

(1) $\frac{1}{3}$
(2) $-\frac{1}{3}$
(3) 3
(4) –3

Parte II

Conteste todas las preguntas en esta parte. Cada respuesta correcta recibirá 2 puntos. Indique claramente los pasos necesarios, incluyendo las sustituciones a las fórmulas apropiadas, diagramas, gráficos, tablas, etc. Para todas las preguntas de esta parte, una respuesta numérica correcta que no demuestre el trabajo, recibirá solamente 1 punto. [10]

31 Kimberly tiene tres pantalones: uno negro, uno rojo y uno marrón claro. También tiene cuatro camisas: una rosada, una blanca, una amarilla y una verde.

Dibuje un diagrama de árbol o enumere en el espacio de muestra, indicando todas las combinaciones de conjuntos posibles que ella podría ponerse, si un conjunto se compone de un pantalón y una camisa.

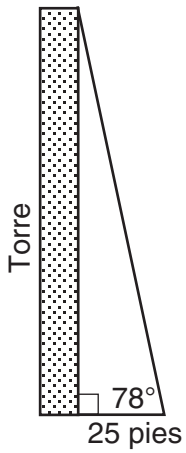
¿Cuántos conjuntos diferentes puede ponerse Kimberly?

32 Una porción de 14 gramos de mayonesa contiene 11 gramos de grasa. ¿Qué porcentaje de la mayonesa, a la *décima del porcentaje más cercana*, es grasa?

33 Todos los meses, Omar compra pizzas para servírselas a sus amigos en una fiesta. En mayo, compró tres más del doble del número de pizzas que compró en abril. Si Omar compró 15 pizzas en mayo, ¿cuántas pizzas compró en abril?

34 La fórmula $C = \frac{5}{9}(F - 32)$ se utiliza para convertir la temperatura en Fahrenheit, F, a temperatura en Celsius, C. ¿Qué temperatura, en grados Fahrenheit, es equivalente a una temperatura de 10° Celsius?

35 Desde un punto sobre suelo plano a 25 pies de la base de una torre, el ángulo de elevación hasta la cima de la torre es de 78°, como se muestra en el siguiente diagrama. Encuentre la altura de la torre, a la *décima de un pie más cercana*.



Parte III

Conteste todas las preguntas en esta parte. Cada respuesta correcta recibirá 3 puntos. Indique claramente los pasos necesarios, incluyendo las sustituciones a las fórmulas apropiadas, diagramas, gráficos, tablas, etc. Para todas las preguntas de esta parte, una respuesta numérica correcta que no demuestre el trabajo, recibirá solamente 1 punto. [6]

36 El perímetro de un cuadrado es 56. Exprese la longitud de la diagonal del cuadrado en la forma radical más sencilla.

37 El Instituto de Cirugía Ocular acaba de comprar una nueva máquina láser por $500,000 para ser utilizada en cirugías de la vista. El Instituto deberá pagar al inventor $550 cada vez que utilice la máquina. Si el Instituto cobra $2,000 por cada cirugía con láser, ¿cuál es la cantidad *mínima* de cirugías que se deberán realizar para que el Instituto pueda obtener ganacias?

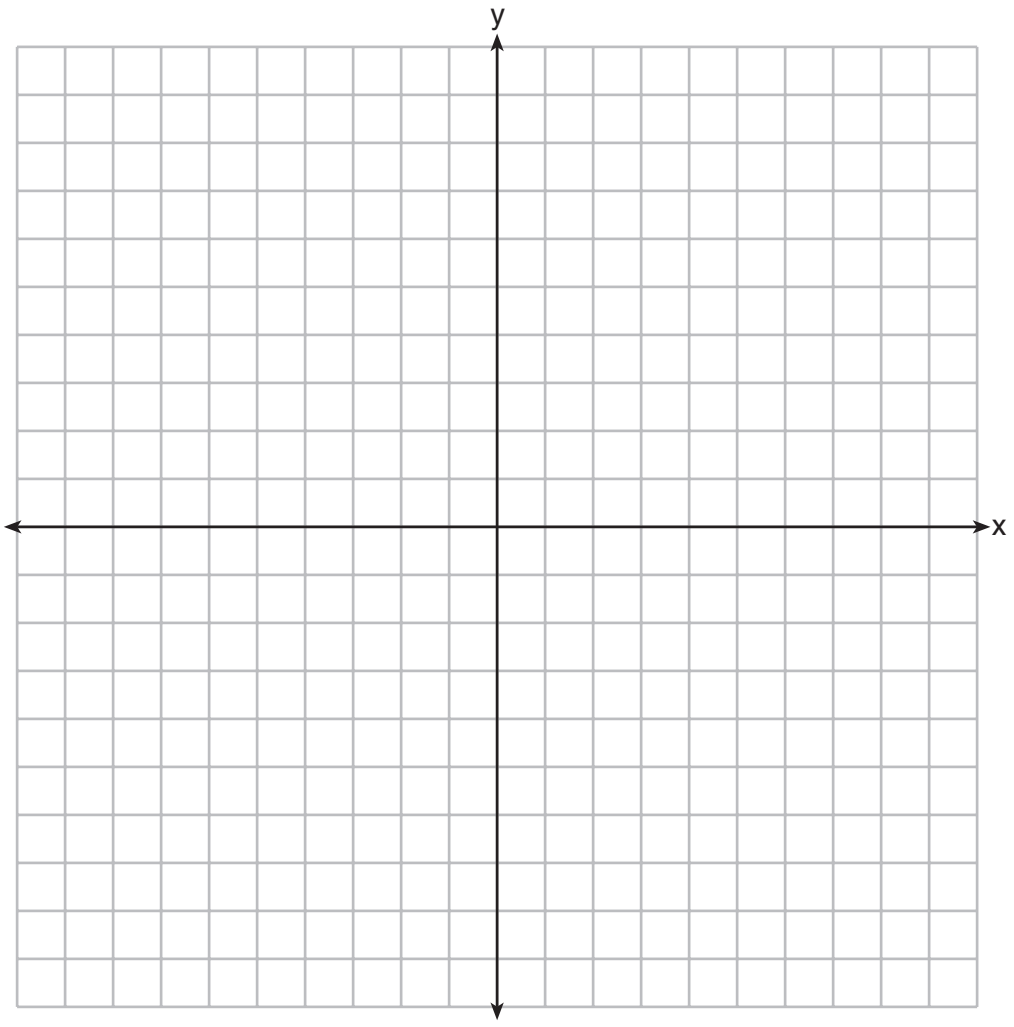
Parte IV

Conteste todas las preguntas en esta parte. Cada respuesta correcta recibirá 4 puntos. Indique claramente los pasos necesarios, incluyendo las sustituciones a las fórmulas apropiadas, diagramas, gráficos, tablas, etc. Para todas las preguntas de esta parte, una respuesta numérica correcta que no demuestre el trabajo, recibirá solamente 1 punto. [8]

38 Grafique los siguientes sistemas de desigualdades en el conjunto de ejes adjunto y marque el conjunto solución *S*:

$$y > x - 4$$
$$y + x \geq 2$$

[Solamente una solución gráfica podrá recibir crédito completo.]

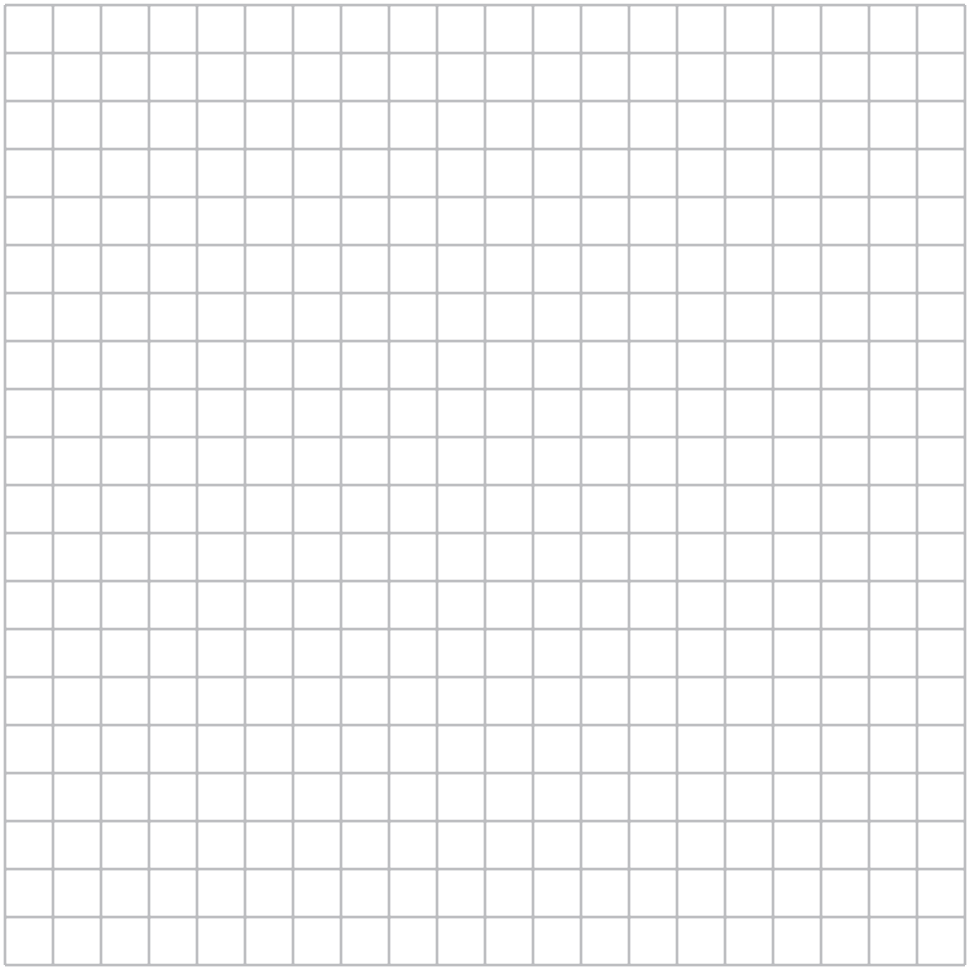


39 La siguiente tabla muestra los pesos, en libras, de los estudiantes de una clase de álgebra.

Utilizando la información, complete la siguiente tabla de frecuencias acumulativas y construya, en la cuadrícula que aparece en la próxima página, un histograma de frecuencia acumulativa.

Intervalo	Frecuencia	Frecuencia acumulativa
91–100	6	
101–110	3	
111–120	0	
121–130	3	
131–140	0	
141–150	2	
151–160	2	

Continuación de la pregunta 39



Desprender por la línea perforada

Desprender por la línea perforada

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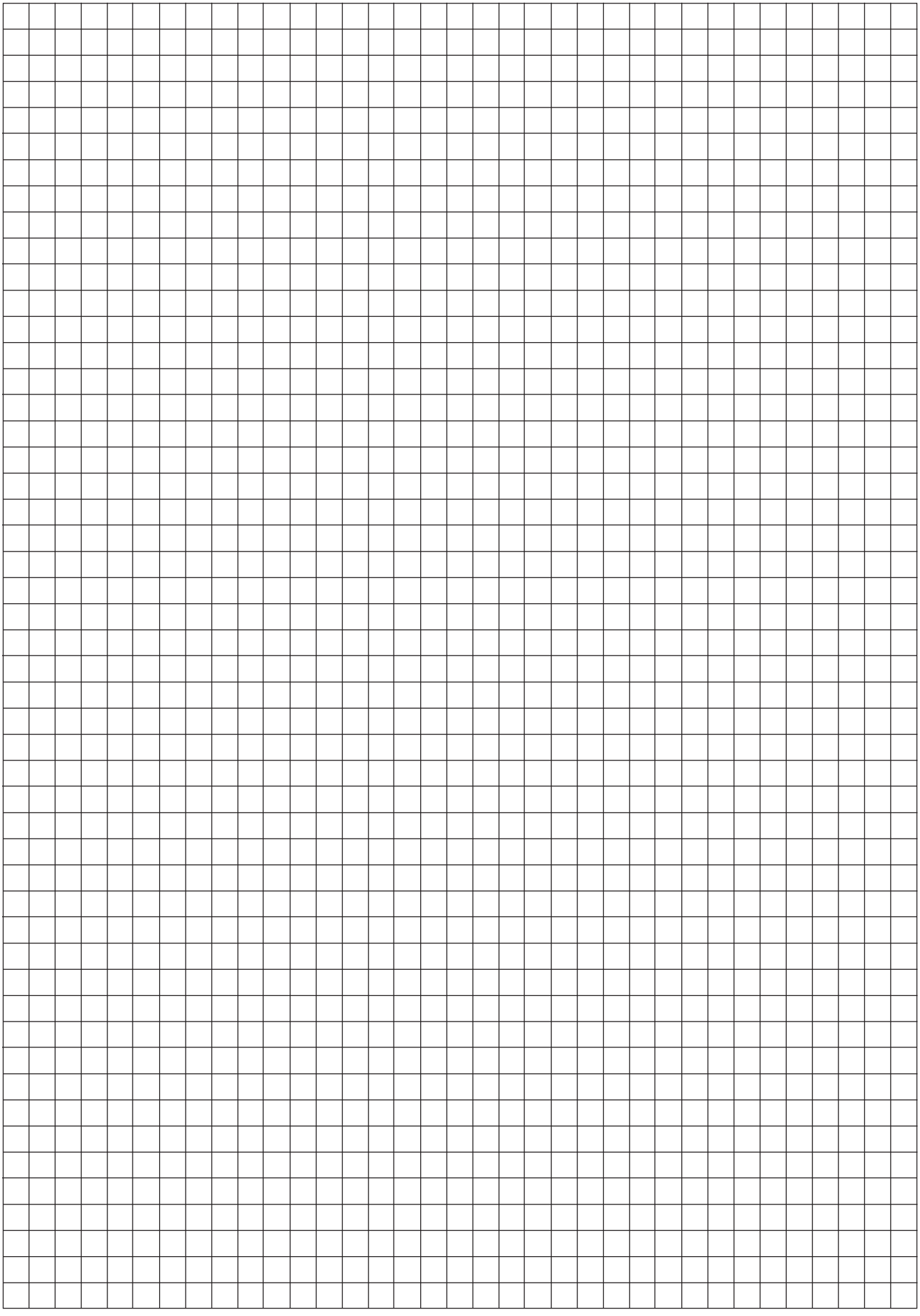
Papel borrrador cuadriculado — Esta hoja *no* será calificada.



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The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATEMÁTICAS A

Jueves, 25 de enero de 2007 — 1:15 a 4:15 p.m., solamente

HOJA DE RESPUESTAS

Estudiante . . . . . Sexo: ☐ Masculino ☐ Femenino Grado . . . .

Profesor . . . . . Escuela . . . . . .

Sus respuestas para la Parte I debe apuntarlas en esta hoja de respuestas.

Parte I

Conteste todas las 30 preguntas de esta parte.

1	9	17	25 . . . . .
2	10	18	26 . . . . .
3	11	19	27 . . . . .
4	12	20	28 . . . . .
5	13	21	29 . . . . .
6	14	22	30 . . . . .
7	15	23	
8	16	24	

Sus respuestas para las Partes II, III, y IV deben escribirse en el folleto del examen.

La declaración de abajo debe ser firmada cuando usted haya completado el examen.

Al terminar este examen declaro no haber tenido conocimiento ilegal previo sobre las preguntas del mismo o sus respuestas. Declaro también que durante el examen no di ni recibí ayuda para responder a las preguntas.

Firma

Desprender por la línea perforada

MATHEMATICS A			
Question	Maximum Credit	Credits Earned	Rater's/Scorer's Initials
Part I 1–30	60		
Part II 31	2		
32	2		
33	2		
34	2		
35	2		
Part III 36	3		
37	3		
Part IV 38	4		
39	4		
Maximum Total	84		

Rater's/Scorer's Name (minimum of three)

Total Raw Score | **Checked by** | **Scaled Score** (from conversion chart)

Desprender por la línea perforada

Desprender por la línea perforada

FOR TEACHERS ONLY

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS A

Thursday, January 25, 2007 — 1:15 to 4:15 p.m., only

SCORING KEY

Mechanics of Rating

The following procedures are to be followed for scoring student answer papers for the Mathematics A examination. More detailed information about scoring is provided in the publication *Information Booklet for Scoring the Regents Examinations in Mathematics A and Mathematics B*.

Use only *red* ink or *red* pencil in rating Regents papers. Do *not* attempt to correct the student's work by making insertions or changes of any kind. Use checkmarks to indicate student errors.

Unless otherwise specified, mathematically correct variations in the answers will be allowed. Units need not be given when the wording of the questions allows such omissions.

Each student's answer paper is to be scored by a minimum of three mathematics teachers. On the back of the student's detachable answer sheet, raters must enter their initials in the boxes next to the questions they have scored and also write their name in the box under the heading "Rater's/Scorer's Name."

Raters should record the student's scores for all questions and the total raw score on the student's detachable answer sheet. Then the student's total raw score should be converted to a scaled score by using the conversion chart that will be posted on the Department's web site http://www.emsc.nysed.gov/osa/ on Thursday, January 25, 2007. The student's scaled score should be entered in the box provided on the student's detachable answer sheet. The scaled score is the student's final examination score.

Part I

Allow a total of 60 credits, 2 credits for each of the following. Allow credit if the student has written the correct answer instead of the numeral 1, 2, 3, or 4.

(1) 1	(6) 4	(11) 3	(16) 3	(21) 2	(26) 4
(2) 2	(7) 1	(12) 2	(17) 2	(22) 1	(27) 2
(3) 3	(8) 2	(13) 3	(18) 1	(23) 3	(28) 1
(4) 3	(9) 4	(14) 1	(19) 3	(24) 1	(29) 3
(5) 4	(10) 4	(15) 4	(20) 1	(25) 1	(30) 4

Updated information regarding the rating of this examination may be posted on the New York State Education Department's web site during the rating period. Check this web site http://www.emsc.nysed.gov/osa/ and select the link "Examination Scoring Information" for any recently posted information regarding this examination. This site should be checked before the rating process for this examination begins and several times throughout the Regents examination period.

General Rules for Applying Mathematics Rubrics

I. General Principles for Rating

The rubrics for the constructed-response questions on the Regents Examinations in Mathematics A and Mathematics B are designed to provide a systematic, consistent method for awarding credit. The rubrics are not to be considered all-inclusive; it is impossible to anticipate all the different methods that students might use to solve a given problem. Each response must be rated carefully using the teacher's professional judgment and knowledge of mathematics; all calculations must be checked. The specific rubrics for each question must be applied consistently to all responses. In cases that are not specifically addressed in the rubrics, raters must follow the general rating guidelines in the publication *Information Booklet for Scoring the Regents Examinations in Mathematics A and Mathematics B*, use their own professional judgment, confer with other mathematics teachers, and/or contact the consultants at the State Education Department for guidance. During each Regents examination administration period, rating questions may be referred directly to the Education Department. The contact numbers are sent to all schools before each administration period.

II. Full-Credit Responses

A full-credit response provides a complete and correct answer to all parts of the question. Sufficient work is shown to enable the rater to determine how the student arrived at the correct answer.

When the rubric for the full-credit response includes one or more examples of an acceptable method for solving the question (usually introduced by the phrase "such as"), it does ***not*** mean that there are no additional acceptable methods of arriving at the correct answer. Unless otherwise specified, mathematically correct alternative solutions should be awarded credit. The only exceptions are those questions that specify the type of solution that must be used; e.g., an algebraic solution or a graphic solution. A correct solution using a method other than the one specified is awarded half the credit of a correct solution using the specified method.

III. Appropriate Work

Full-Credit Responses: The directions in the examination booklet for all the constructed-response questions state: "Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, charts, etc." The student has the responsibility of providing the correct answer ***and*** showing how that answer was obtained. The student must "construct" the response; the teacher should not have to search through a group of seemingly random calculations scribbled on the student paper to ascertain what method the student may have used.

Responses With Errors: Rubrics that state "Appropriate work is shown, but …" are intended to be used with solutions that show an essentially complete response to the question but contain certain types of errors, whether computational, rounding, graphing, or conceptual. If the response is incomplete, i.e., an equation is written but not solved or an equation is solved but not all of the parts of the question are answered, appropriate work has ***not*** been shown. Other rubrics address incomplete responses.

IV. Multiple Errors

Computational Errors, Graphing Errors, and Rounding Errors: Each of these types of errors results in a 1-credit deduction. Any combination of two of these types of errors results in a 2-credit deduction. No more than 2 credits should be deducted for such mechanical errors in any response. The teacher must carefully review the student's work to determine what errors were made and what type of errors they were.

Conceptual Errors: A conceptual error involves a more serious lack of knowledge or procedure. Examples of conceptual errors include using the incorrect formula for the area of a figure, choosing the incorrect trigonometric function, or multiplying the exponents instead of adding them when multiplying terms with exponents. A response with one conceptual error can receive no more than half credit.

If a response shows repeated occurrences of the same conceptual error, the student should not be penalized twice. If the same conceptual error is repeated in responses to other questions, credit should be deducted in each response.

If a response shows two (or more) different major conceptual errors, it should be considered completely incorrect and receive no credit.

If a response shows one conceptual error and one computational, graphing, or rounding error, the teacher must award credit that takes into account both errors: i.e., awarding half credit for the conceptual error and deducting 1 credit for each mechanical error (maximum of two deductions for mechanical errors).

Part II

For each question, use the specific criteria to award a maximum of two credits. Unless otherwise specified, mathematically correct alternative solutions should be awarded appropriate credit.

(31) **[2]** 12, and a correct tree diagram or a correct sample space is shown.

[1] An incomplete tree diagram or sample space is shown with at least 8 possible combinations shown, and an appropriate number of outfits is found.

or

[1] A correct tree diagram or sample space is shown, but the number of possible outfits is missing or is incorrect.

or

[1] 12, but 3×4 is used to find the number of outfits.

[0] 12, but no work is shown.

or

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

(32) **[2]** 78.6%, and appropriate work is shown.

[1] Appropriate work is shown, but one computational or rounding error is made.

or

[1] Appropriate work is shown, but one conceptual error is made.

or

[1] 78.6%, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, incoherent or is a correct response that was obtained by an obviously incorrect procedure.

(33) **[2]** 6, and appropriate work is shown, such as solving the equation $2x + 3 = 15$ or trial and error with at least three trials and appropriate checks.

[1] Appropriate work is shown, but one computational error is made.

or

[1] Appropriate work is shown, but one conceptual error is made.

or

[1] A correct equation is written, but no further correct work is shown.

or

[1] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but no solution is found.

or

[1] 6, but no work or fewer than three trials and appropriate checks are shown.

[0] A zero response is completely incorrect, irrelevant or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

(34) **[2]** 50, and appropriate work is shown, such as solving the equation $10 = \frac{5}{9}(F - 32)$.

[1] Appropriate work is shown, but one computational error is made.

or

[1] Appropriate work is shown, but one conceptual error is made.

or

[1] Correct substitution is made into the equation, but no further correct work is shown.

or

[1] 50, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

(35) **[2]** 117.6, and appropriate work is shown, such as $\tan 78° = \frac{x}{25}$.

[1] Appropriate work is shown, but one computational or rounding error is made.

or

[1] Appropriate work is shown, but one conceptual error is made, such as using an incorrect trigonometric function, but an appropriate solution is found.

or

[1] A correct trigonometric equation is written, but no further correct work is shown.

or

[1] 117.6, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Part III

For each question, use the specific criteria to award a maximum of three credits. Unless otherwise specified, mathematically correct alternative solutions should be awarded appropriate credit.

(36) **[3]** $14\sqrt{2}$, and appropriate work is shown, such as using the Pythagorean theorem or drawing a correctly labeled diagram that shows the isosceles right triangle.

[2] Appropriate work is shown, but one computational error is made.

or

[2] Appropriate work is shown, but the answer is expressed as a decimal or the radical is not simplified.

[1] Appropriate work is shown, but two or more computational errors are made.

or

[1] Appropriate work is shown, but one computational error is made, and the answer is not expressed as a radical in simplest form.

or

[1] Appropriate work is shown, but one conceptual error is made.

or

[1] 14, the side of the square is found correctly, but no further correct work is shown.

or

[1] $14\sqrt{2}$, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

(37) **[3]** 345, and appropriate work is shown, such as solving the inequality $1450x > 500{,}000$, solving an equation, or trial and error with at least three trials and appropriate checks.

[2] Appropriate work is shown, but one computational or rounding error is made.

or

[2] The trial-and-error method is used to find a correct solution, but only two trials and appropriate checks are shown.

[1] Appropriate work is shown, but two or more computational or rounding errors are made.

or

[1] Appropriate work is shown, but one conceptual error is made.

or

[1] A correct inequality or equation is written, but no further correct work is shown.

or

[1] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but no solution is found.

or

[1] 345, but no work or only one trial with an appropriate check is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Part IV

For each question, use the specific criteria to award a maximum of four credits. Unless otherwise specified, mathematically correct alternative solutions should be awarded appropriate credit.

(38) **[4]** Both inequalities are graphed correctly and at least one is labeled, and the solution set is labeled *S*.

[3] Appropriate work is shown, but one graphing error is made, such as drawing a solid line for $y > x - 4$ or shading incorrectly, but the solution set is labeled *S*.

or

[3] Both inequalities are graphed correctly and at least one is labeled, but the solution set is not labeled or is labeled incorrectly.

or

[3] Both inequalities are graphed correctly, the solution set is labeled, but neither inequality is labeled.

[2] Appropriate work is shown, but two or more graphing errors are made, but an appropriate solution set is labeled.

or

[2] Appropriate work is shown, but one conceptual error is made, such as graphing the lines $y = -x + 2$ and $y = x - 4$ and labeling the point of intersection *S*.

[1] One inequality is graphed and shaded correctly, but no further correct work is shown.

or

[1] The lines $y = -x + 2$ and $y = x - 4$ are graphed correctly, but no solution is indicated.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

(39) **[4]** The table is completed correctly, and an appropriate cumulative frequency histogram is drawn and labeled.

[3] The table is completed correctly, but one error is made in drawing the cumulative frequency histogram or one or more labeling errors are made.

or

[3] The table is not completed correctly, but an appropriate cumulative frequency histogram is drawn, based on the table.

[2] One error is made in completing the table, and one graphing error is made in drawing the cumulative frequency histogram.

or

[2] The table is completed correctly, but one conceptual error is made, such as drawing a frequency histogram or a cumulative frequency bar graph.

[1] The table is completed correctly, but no histogram is drawn.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Map to Learning Standards

Key Ideas	Item Numbers
Mathematical Reasoning	6, 15
Number and Numeration	3, 16, 20, 30
Operations	1, 7, 23, 24, 28, 34, 36
Modeling/Multiple Representation	2, 10, 12, 22, 25, 31, 37
Measurement	4, 8, 11, 17, 18, 32, 35, 39
Uncertainty	9, 13, 21, 29
Patterns/Functions	5, 14, 19, 26, 27, 33, 38

Regents Examination in Mathematics A

January 2007

Chart for Converting Total Test Raw Scores to Final Examination Scores (Scaled Scores)

The *Chart for Determining the Final Examination Score for the January 2007 Regents Examination in Mathematics A* will be posted on the Department's web site http://www.emsc.nysed.gov/osa/ on Thursday, January 25, 2007. Conversion charts provided for previous administrations of the Mathematics A examination must NOT be used to determine students' final scores for this administration.

Submitting Teacher Evaluations of the Test to the Department

Suggestions and feedback from teachers provide an important contribution to the test development process. The Department provides an online evaluation form for State assessments. It contains spaces for teachers to respond to several specific questions and to make suggestions. Instructions for completing the evaluation form are as follows:

1. Go to www.emsc.nysed.gov/osa/exameval.
2. Select the test title.
3. Complete the required demographic fields.
4. Complete each evaluation question and provide comments in the space provided.
5. Click the SUBMIT button at the bottom of the page to submit the completed form.

University of the State of New York
State Education Department

Regents Examination in Mathematics A
January 2007

Chart for Converting Total Test Raw Scores to
Final Examination Scores (Scaled Scores)

Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score
84	100	55	81	27	56
83	99	54	80	26	55
82	99	53	79	25	54
81	98	52	79	24	52
80	98	51	78	23	51
79	97	50	78	22	49
78	96	49	77	21	48
77	96	48	76	20	46
76	95	47	75	19	45
75	95	46	75	18	43
74	94	45	74	17	42
73	93	44	73	16	40
72	93	43	72	15	38
71	92	42	72	14	36
70	91	41	71	13	35
69	90	40	70	12	33
68	90	39	69	11	31
67	89	38	68	10	29
66	88	37	67	9	26
65	87	36	66	8	24
64	87	35	65	7	22
63	86	34	64	6	19
62	86	33	63	5	17
61	85	32	62	4	14
60	84	31	61	3	11
59	83	30	60	2	8
58	83	29	59	1	4
57	82	28	57	0	0
56	81				

To determine the student's final examination score, find the student's total test raw score in the column labeled "Raw Score" and then locate the scaled score that corresponds to that raw score. The scaled score is the student's final examination score. Enter this score in the space labeled "Scaled Score" on the student's answer sheet.

All student answer papers that receive a scaled score of 60 through 64 **must** be scored a second time. For the second scoring, a different committee of teachers may score the student's paper or the original committee may score the paper, except that no teacher may score the same open-ended questions that he/she scored in the first rating of the paper.

Because scaled scores corresponding to raw scores in the conversion chart change from one examination to another, it is crucial that for each administration, the conversion chart provided for that administration be used to determine the student's final score. The chart above is usable only for this administration of the Mathematics A Examination.