The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

SPANISH EDITION
MATHEMATICS A
THURSDAY, JUNE 15, 2006
1:15 TO 4:15 P.M., ONLY

# MATEMÁTICAS A

**Jueves,** 15 de junio de 2006 — 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 una gráfica 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 las gráficas y los dibujos, los cuales deben realizarse con lapiz.**

**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, gráficas, 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 exámen.**

**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 la palabra o expresión que completa mejor la afirmación o que contesta mejor la pregunta.** [60]

**Utilice este espacio para sus cálculos.**

1 En el siguiente diagrama, la línea *a* intersecta la línea *b*.


¿Cuál es el valor de *x*?

(1) –10
(2) 5
(3) 10
(4) 90

**2** ¿Cuál es el valor de *x* en la ecuación $13x - 2(x + 4) = 8x + 1$?

(1) 1
(2) 2
(3) 3
(4) 4

**3** Una función de un proyector de cine es aumentar la imagen de la película. Este procedimiento es un ejemplo de una

(1) línea de simetría
(2) reflexión de línea
(3) traslación
(4) expansión

**4** ¿Cuál es el producto de $\frac{1}{3}x^2y$ y $\frac{1}{6}xy^3$?

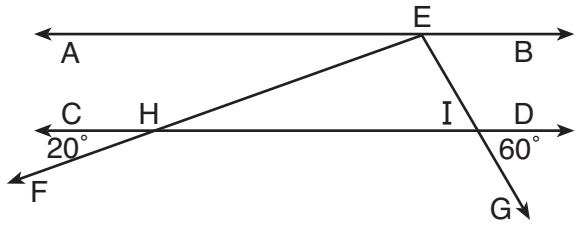
(1) $\frac{1}{2}x^2y^3$
(2) $\frac{1}{9}x^3y^4$
(3) $\frac{1}{18}x^2y^3$
(4) $\frac{1}{18}x^3y^4$

**5** ¿Cuál es el valor de $\frac{8!}{4!}$?

(1) 1,680
(2) 2
(3) 2!
(4) 4!

**Utilice este espacio para sus cálculos.**

**6** En el siguiente diagrama, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$. Desde el punto $E$ sobre $\overleftrightarrow{AB}$, están dibujadas las transversales $\overrightarrow{EF}$ y $\overrightarrow{EG}$, intersectando $\overleftrightarrow{CD}$ en $H$ e $I$, respectivamente.




Si $m\angle CHF = 20$ y $m\angle DIG = 60$, ¿qué es $m\angle HEI$?

(1) 60
(2) 80
(3) 100
(4) 120

**7** Leo compró cinco camisas, tres pares de pantalones y cuatro pares de zapatos. ¿Qué expresión representa cuántos conjuntos diferentes, compuestos por una camisa, un par de pantalones y un par de zapatos, puede hacer Leo?

(1) $5 \bullet 3 \bullet 4$
(2) $5 + 3 + 4$
(3) ${}_{12}C_3$
(4) ${}_{12}P_3$

**8** ¿Cuál es la longitud de un lado del cuadrado cuyo perímetro tiene el mismo valor numérico que su área?

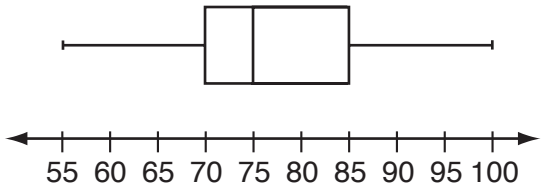
(1) 5
(2) 6
(3) 3
(4) 4

**9** ¿Cuál lista está en orden desde el valor más pequeño hasta el valor más grande?

(1) $\sqrt{10}, \frac{22}{7}, \pi, 3.1$
(2) $3.1, \frac{22}{7}, \pi, \sqrt{10}$
(3) $\pi, \frac{22}{7}, 3.1, \sqrt{10}$
(4) $3.1, \pi, \frac{22}{7}, \sqrt{10}$

**10** El siguiente diagrama de caja y línea representa los puntajes obtenidos en un examen de ciencias.

**Utilice este espacio para sus cálculos.**




¿Cuál es la mediana del puntaje?

(1) 70
(2) 75
(3) 77
(4) 85

**11** El segundo lado de un triángulo es dos más que el primer lado, y el tercer lado es tres menos que el primer lado. ¿Qué expresión representa el perímetro del triángulo?

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

**12** ¿Cuál es el valor de $x$ en la ecuación $\frac{x}{2x+1} = \frac{4}{3}$?

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

**13** ¿Qué enunciado describe el gráfico de $x = 4$?

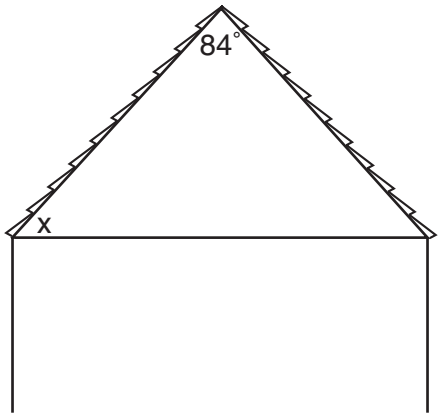
(1) Pasa a través del punto (0,4).
(2) Tiene una pendiente de 4.
(3) Está paralelo al eje $y$.
(4) Está paralelo al eje $x$.

**14** Dado el enunciado: "Si $x$ es un número racional, entonces $\sqrt{x}$ es irracional". ¿Qué valor de $x$ hace que el enunciado sea *falso*?

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

**15** El siguiente diagrama muestra el techo de una casa que tiene la forma de un triángulo isósceles. El ángulo del vértice formado en la punta del techo es de 84°.

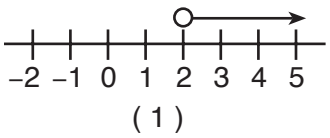
**Utilice este espacio para sus cálculos.**



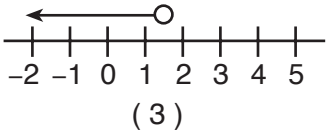

¿Cuál es la medida de $x$?

(1) 138°
(2) 96°
(3) 84°
(4) 48°

**16** ¿Qué gráfico representa mejor el conjunto solucioń para la desigualdad $x > \sqrt{2}$ ?



( 1 )



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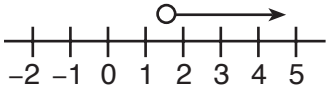

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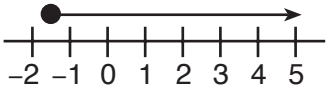


( 4 )

**17** La fórmula para el volumen de un cilindro circular recto es $V = \pi r^2 h$. El valor de $h$ puede ser expresado como

(1) $\frac{V}{\pi} r^2$
(2) $\frac{V}{\pi r^2}$
(3) $\frac{\pi r^2}{V}$
(4) $V - \pi r^2$

**Utilice este espacio para sus cálculos.**

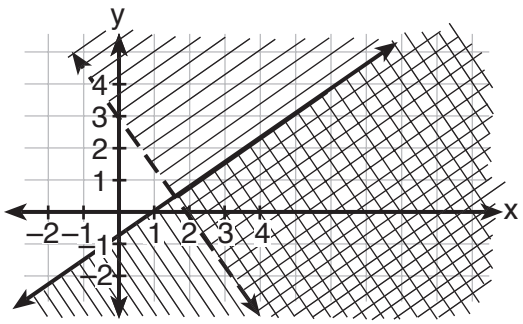
**18** Si una línea es horizontal, su pendiente es

(1) 1
(2) 0
(3) indefinida
(4) negativa

**19** Chantrice está tirando de un carro por una calle horizontal y lisa. La trayectoria del centro de una de las ruedas del carro se describe mejor como

(1) un círculo
(2) una línea perpendicular al camino
(3) una línea paralela al camino
(4) dos líneas paralelas

**20** ¿Qué punto de coordenadas está en el conjunto solución para el sistema de desigualdades mostradas en el siguiente gráfico?




(1) (3,1)
(2) (2,2)
(3) (1,–1)
(4) (0,1)

**21** Las medidas de dos ángulos complementarios están representadas por $(3x + 15)$ y $(2x – 10)$. ¿Cuál es el valor de $x$?

(1) 17
(2) 19
(3) 35
(4) 37

**22** Si $x = 3$, ¿qué enunciado es *falso*?

(1) $x$ es primo y $x$ es impar.
(2) $x$ es impar o $x$ es par.
(3) $x$ no es primo y $x$ es impar.
(4) $x$ es impar y $2x$ es par.

**23** Factorada completamente, la expresión $2y^2 + 12y - 54$ es equivalente a

(1) $2(y + 9)(y - 3)$
(2) $2(y - 3)(y - 9)$
(3) $(y + 6)(2y - 9)$
(4) $(2y + 6)(y - 9)$

**Utilice este espacio para sus cálculos.**

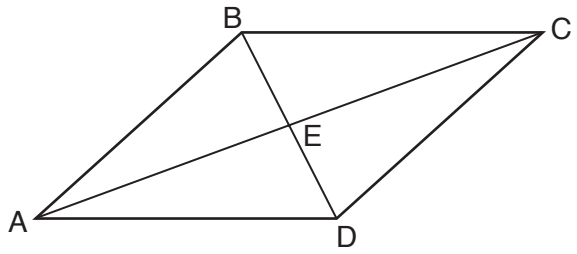
**24** ¿Qué enunciado ilustra mejor la propiedad de la identidad aditiva?

(1) $6 + 2 = 2 + 6$
(2) $6(2) = 2(6)$
(3) $6 + (-6) = 0$
(4) $6 + 0 = 6$

**25** La expresión $\frac{5x}{6} + \frac{x}{4}$ es equivalente a

(1) $\frac{3x}{5}$
(2) $\frac{5x^2}{10}$
(3) $\frac{13x}{12}$
(4) $\frac{5x}{24}$

**26** En el siguiente diagrama del paralelogramo *ABCD*, las diagonales $\overline{AC}$ y $\overline{BD}$ se intersectan en *E*, $BE = \frac{2}{3}x$, y $ED = x - 10$.




¿Cuál es el valor de *x*?

(1) –30
(2) 30
(3) –6
(4) 6

**Utilice este espacio para sus cálculos.**

**27** Expresado en la forma radical más simple, el producto de $\sqrt{6} \bullet \sqrt{15}$ es

(1) $\sqrt{90}$

(2) $3\sqrt{10}$

(3) $9\sqrt{10}$

(4) $3\sqrt{15}$

**28** ¿Cuál es la suma de $6 \times 10^3$ y $3 \times 10^2$?

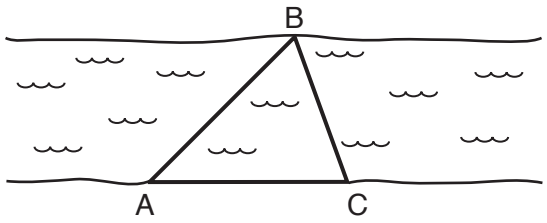
(1) $6.3 \times 10^3$

(2) $9 \times 10^5$

(3) $9 \times 10^6$

(4) $18 \times 10^5$

**29** En las orillas de un río, los topógrafos marcaron las ubicaciones *A*, *B*, y *C*. La medida de $\angle ACB = 70°$ y la medida de $\angle ABC = 65°$.




¿Qué expresión muestra la relación entre las longitudes de los lados de este triángulo?

(1) $AB < BC < AC$

(2) $BC < AB < AC$

(3) $BC < AC < AB$

(4) $AC < AB < BC$

**30** ¿Qué desigualdad representa la probabilidad, $x$, de que suceda cualquier evento?

(1) $x \geq 0$

(2) $0 < x < 1$

(3) $x < 1$

(4) $0 \leq x \leq 1$

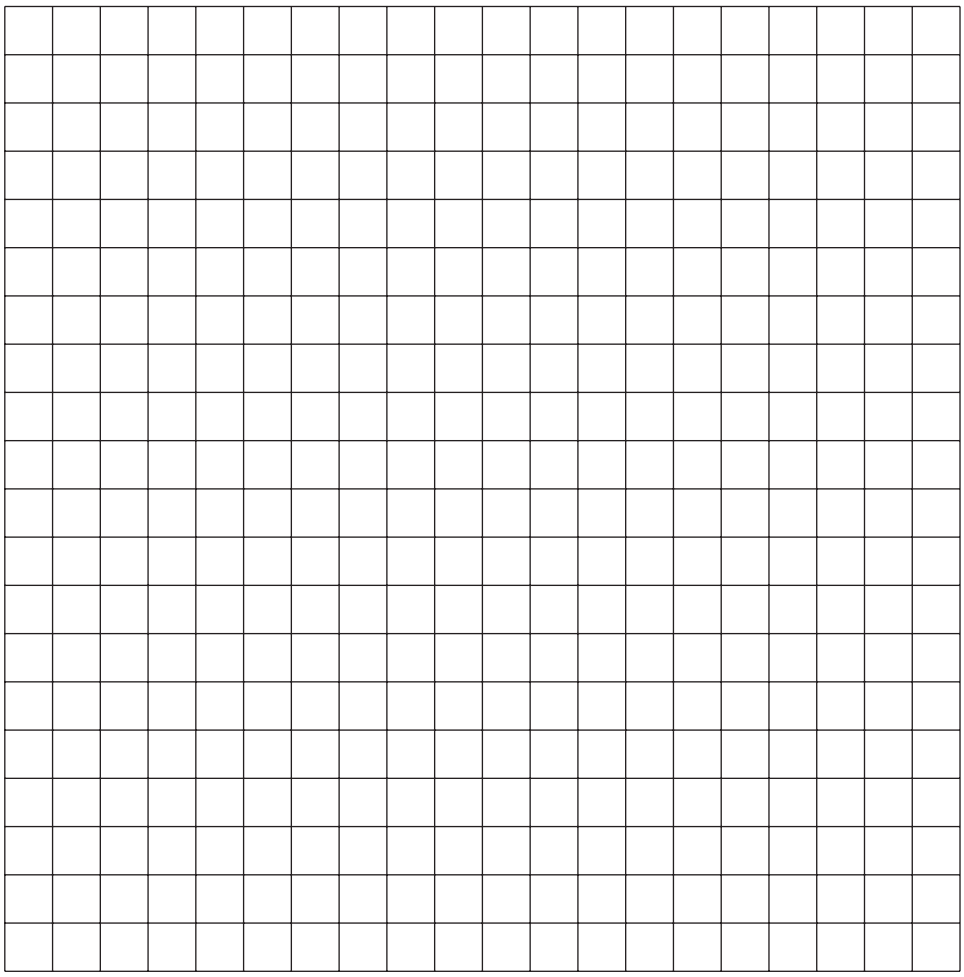
## Parte II

**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** Determine el área, en pies cuadrados, del cuadrado *más pequeño* que puede contener a un círculo con un radio de 8 pies.

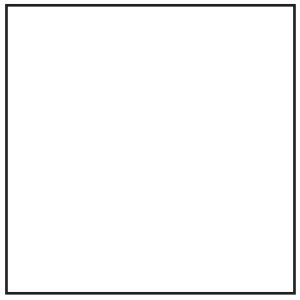
**32** Cinco amigos se encuentran para almorzar y todos se estrechan las manos. Cada persona estrechó una sola vez la mano derecha de la otra persona. ¿Cuál fue el número total de apretones de mano?

**33** Dos excursionistas comenzaron en la misma ubicación. Uno recorrió 2 millas hacia el este y después 1 milla hacia el norte. El otro recorrió 1 milla hacia el oeste y después 3 millas hacia el sur. Al final de sus excursiones, ¿a cuántas millas de distancia están los dos excursionistas? [El uso de la siguiente cuadrícula es opcional.]



**34** Hallar el valor de $x$: $3.3 - x = 3(x - 1.7)$

**35** En el siguiente cuadrado, dibuje todas las líneas de simetría.



## 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** Tamara tiene dos hermanas. Una de las hermanas es 7 años mayor que Tamara. La otra hermana es 3 años menor que Tamara. El producto de las edades de las hermanas de Tamara es 24. ¿Cuántos años tiene Tamara?

**37** Los puntajes de los exámenes de matemáticas de Sara fueron 64, 80, 88, 78, 60, 92, 84, 76, 86, 78, 72 y 90. Determine la media, la mediana y la moda en los puntajes de los exámenes de Sara.

## 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** Sharu tiene $2.35 en monedas de cinco y diez centavos. Si él tiene un total de treinta y dos monedas, ¿cuántas de *cada una* de las monedas tiene?

**39** Una persona mide el ángulo de caída desde la cima de una pared hacia un punto en el suelo. El punto está ubicado sobre suelo plano a 62 pies desde la base de la pared y el ángulo de caída es 52°. ¿Cuán alta es la pared, a la *décima más cercana de un pie*?

Desprender por la línea perforada

Desprender por la línea perforada

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

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

Desprender por la línea perforada

Desprender por la línea perforada

Desprender por la línea perforada

Desprender por la línea perforada

**The University of the State of New York**

REGENTS HIGH SCHOOL EXAMINATION

# MATEMÁTICAS A

**Jueves,** 15 de junio de 2006 — 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**

| 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) |
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**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,** June 15, 2006 — 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, June 15, 2006. 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) 3 | (6) 3 | (11) 3 | (16) 2 | (21) 1 | (26) 2 |
| (2) 3 | (7) 1 | (12) 2 | (17) 2 | (22) 3 | (27) 2 |
| (3) 4 | (8) 4 | (13) 3 | (18) 2 | (23) 1 | (28) 1 |
| (4) 4 | (9) 4 | (14) 4 | (19) 3 | (24) 4 | (29) 3 |
| (5) 1 | (10) 2 | (15) 4 | (20) 1 | (25) 3 | (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]** 256, and appropriate work is shown, such as finding the side of the square and calculating the area.

**[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]** Appropriate work is shown, but only the area of the circle is found.

***or***

**[1]** An incorrect value for the side of the square is determined, but an appropriate area is found.

***or***

**[1]** A correct value for the side of the square is determined, but the area is not found or is found incorrectly.

***or***

**[1]** The area for the square inscribed in the circle is found, resulting in an answer of 128.

***or***

**[1]** 256, 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.

(32) **[2]** 10, and appropriate work is shown, such as ${}_5C_2$ or a diagram or a list.

**[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]** 10, 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.

(33) **[2]** 5, and appropriate work is shown, such as the distance formula, the Pythagorean theorem, or a Pythagorean triple.

**[1]** Appropriate work is shown, but one computational or graphing 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]** 5, 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.

(34) **[2]** 2.1, and appropriate work is shown.

**[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]** 2.1, 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]** The four correct lines of symmetry are drawn.

**[1]** At least two correct lines of symmetry are drawn, and no inappropriate lines are drawn.

***or***

**[1]** All four correct lines of symmetry are drawn, but one or more inappropriate lines are also drawn.

**[0]** At least one of the correct lines of symmetry is missing, and one or more inappropriate lines are drawn.

***or***

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

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## 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]** 5, and appropriate work is shown, such as the quadratic equation $(x + 7)(x - 3) = 24$ or trial and error with at least three trials and appropriate checks.

**[2]** A correct quadratic equation is written, but one computational error is made in finding Tamara's age.

***or***

**[2]** 12 and 2 are found as the sisters' ages, but Tamara's age is not found.

***or***

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

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

***or***

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

***or***

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

***or***

**[1]** An incorrect equation of equal difficulty is solved appropriately for Tamara's age.

***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]** 5, 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.

(37) **[3]** Mean = 79, median = 79, and mode = 78, and appropriate work is shown.

**[2]** Appropriate work is shown, but only two of the three measures of central tendency are determined and identified correctly.

***or***

**[2]** Appropriate work is shown and all three measures of central tendency are determined correctly, but the measures are not identified or are identified incorrectly.

**[1]** Appropriate work is shown, but only one of the three measures of central tendency is determined and identified correctly.

***or***

**[1]** Mean = 79, median = 79, and mode = 78, but no work is shown.

**[0]** 79, 79, and 78, but no work is shown, and the answers are not identified or are identified incorrectly.

***or***

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

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## 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]** 17 nickels and 15 dimes, and appropriate work is shown, such as the equation $0.05x + 0.10(32 - x) = 2.35$ or trial and error with at least three trials and appropriate checks.

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

***or***

**[3]** Appropriate work is shown, and the correct answers are found, but they are not labeled or are labeled incorrectly.

***or***

**[3]** Appropriate work is shown, but only the correct number of nickels or the correct number of dimes is found and labeled.

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

***or***

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

***or***

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

***or***

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

***or***

**[2]** An incorrect system of equations of equal difficulty is solved appropriately for both the number of nickels and dimes.

***or***

**[2]** A correct equation is solved for $x$, but no further correct work is shown.

**[1]** Appropriate work is shown, but one conceptual error and one computational error are made.

***or***

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

***or***

**[1]** 17 nickels and 15 dimes, but no work or only one trial with an appropriate check is shown.

**[0]** 17 nickels *or* 15 dimes, but no work or only one trial with an appropriate check is shown.

***or***

**[0]** 17 and 15, but no work is shown, and the answers are not labeled or are labeled incorrectly.

***or***

**[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]** 79.4, and appropriate work is shown, such as $\tan 52 = \frac{x}{62}$.

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

***or***

**[3]** An incorrectly labeled diagram is drawn, but the appropriate trigonometric function is used, and an appropriate answer is found.

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

***or***

**[2]** Appropriate work is shown, but one conceptual error is made, such as using an incorrect trigonometric function or ratio.

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

***or***

**[1]** A correctly labeled diagram is drawn, but no further correct work is shown.

***or***

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

***or***

**[1]** An incorrectly labeled diagram is drawn, but an appropriate equation is written, but no further correct work is shown.

***or***

**[1]** 79.4, 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.

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**Map to Learning Standards**

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

**Regents Examination in Mathematics A**

**June 2006**

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

**The *Chart for Determining the Final Examination Score for the June 2006 Regents Examination in Mathematics A* will be posted on the Department's web site http://www.emsc.nysed.gov/osa/ on Thursday, June 15, 2006. Conversion charts provided for previous administrations of the Mathematics A examination must NOT be used to determine students' final scores for this administration.**

**The *Teacher Evaluation of State Examinations* forms will also be posted on the same web site. Please select the link "Teacher Evaluation Forms" and then the examination title to complete the evaluation form for the *June 2006 Regents Examination in Mathematics A.***