The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

ÁLGEBRA INTEGRADA

Jueves, 14 de junio de 2012 — 1:15 a 4:15 p.m., solamente

Nombre del estudiante:_____

Nombre de la escuela:_____

Escriba en letra de molde su nombre y el nombre de su escuela en las líneas de arriba.

Se le ha proporcionado una hoja de respuestas separada para la Parte I. Siga las instrucciones del supervisor para completar la información del estudiante en su hoja de respuestas.

Este examen tiene cuatro partes, con un total de 39 preguntas. Usted debe responder todas las preguntas de este examen. Escriba sus respuestas a las preguntas de selección múltiple de la Parte I en la hoja de respuestas separada. Escriba sus respuestas a las preguntas de las Partes II, III y IV directamente en este folleto. Todo el trabajo debe ser realizado con bolígrafo de tinta permanente, con excepción de los gráficos y los dibujos, que deben hacerse con lápiz grafito. Indique claramente los pasos necesarios, incluyendo apropiadamente las sustituciones de fórmulas, diagramas, gráficos, tablas, etc. Las fórmulas que podría necesitar para responder a ciertas preguntas se encuentran al final de este examen. Esta hoja está perforada para que pueda desprenderla de este folleto.

No se permite el uso de papel de borrador para ninguna parte de este examen, pero puede usar los espacios en blanco en este folleto como papel de borrador. Una hoja perforada de papel cuadriculado de borrador está provista al final de este folleto para cualquier pregunta para la cual sea útil un gráfico, aunque no se requiere. Puede desprender esta hoja del folleto. Todo trabajo realizado en esta hoja de papel cuadriculado de borrador *no* será calificado.

Cuando haya terminado el examen, deberá firmar la declaración impresa al final de la hoja de respuestas, indicando que no tenía conocimiento ilegal previo de las preguntas o respuestas del examen y que no ha dado ni recibido asistencia alguna para responder a las preguntas durante el examen. Su hoja de respuestas no será aceptada si no firma dicha declaración.

Aviso…

Se le debe proporcionar una calculadora para hacer gráficos y una regla para que utilice mientras realiza el examen.
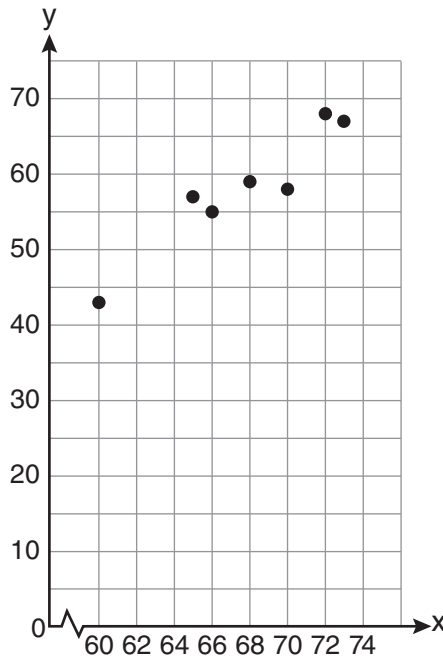

El uso de cualquier aparato destinado a la comunicación está estrictamente prohibido mientras esté realizando el examen. Si usted utiliza cualquier aparato destinado a la comunicación, aunque sea brevemente, su examen será invalidado y no se calculará su calificación.

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

Responda las 30 preguntas de esta parte. Cada respuesta correcta recibirá 2 créditos. No se dará ningún crédito parcial. Para cada pregunta, escriba en la hoja de respuesta separada el número que precede a la palabra o expresión que mejor complete el enunciado o que mejor responda a la pregunta. [60]

Utilice este espacio para sus cálculos.

1 En un juego de béisbol, la pelota viajó 350.7 pies en 4.2 segundos. ¿Cuál fue la velocidad promedio de la pelota, en pies por segundo?

(1) 83.5   (3) 354.9

(2) 177.5   (4) 1,472.9

2 Se está realizando una encuesta para determinar si una compañía de cable debe agregar otro canal de deportes a su programación. ¿Qué encuesta al azar sería la *menos* parcial (menos sesgada)?

(1) encuestar a 30 hombres en un gimnasio

(2) encuestar a 45 personas en un centro comercial

(3) encuestar a 50 aficionados en un partido de fútbol americano

(4) encuestar a 20 miembros de un equipo de fútbol de una escuela secundaria

3 El cociente de $\dfrac{8x^5 - 2x^4 + 4x^3 - 6x^2}{2x^2}$ es

(1) $16x^7 - 4x^6 + 8x^5 - 12x^4$

(2) $4x^7 - x^6 + 2x^5 - 3x^4$

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

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

4 Marcy determinó que la edad de su padre es cuatro menos que tres veces su edad. Si x representa la edad de Marcy, ¿qué expresión representa la edad del padre?

(1) $3x - 4$ (3) $4x - 3$

(2) $3(x - 4)$ (4) $4 - 3x$

5 Se graficó un conjunto de datos en el siguiente diagrama de dispersión.

Este diagrama de dispersión muestra

(1) que no hay correlación   (3) una correlación negativa

(2) una correlación positiva   (4) una correlación no definida

6 ¿Qué situación es un ejemplo de datos bivariados?

(1) el número de pizzas que Tanya come durante sus años en la escuela secundaria

(2) el número de veces que Ezra le pone aire a las llantas de la bicicleta durante el verano

(3) el número de jonrones que Elías batea por juego y el número de horas que practica béisbol

(4) el número de horas que Nellie estudia para sus pruebas de matemáticas durante la primera mitad del año escolar

7 El puntaje de Brianna en una evaluación nacional de matemáticas superó los puntajes de 95,000 de los 125,000 estudiantes que hicieron la evaluación. ¿Cuál fue su rango percentil?

(1) 6

(3) 31

(2) 24

(4) 76

8 Si $A = \{0, 1, 3, 4, 6, 7\}$, $B = \{0, 2, 3, 5, 6\}$ y $C = \{0, 1, 4, 6, 7\}$, entonces $A \cap B \cap C$ es

(1) $\{0, 1, 2, 3, 4, 5, 6, 7\}$

(3) $\{0, 6\}$

(2) $\{0, 3, 6\}$

(4) $\{0\}$

9 ¿Qué gráfico representa una función?

(1)

(3)

(2)

(4)

10 ¿Cuál es el producto de $(3x + 2)$ y $(x - 7)$?

(1) $3x^2 - 14$ (3) $3x^2 - 19x - 14$

(2) $3x^2 - 5x - 14$ (4) $3x^2 - 23x - 14$

11 Si cinco veces un número es menor que 55, ¿cuál es el mayor valor entero posible del número?

(1) 12   (3) 10

(2) 11   (4) 9

12 La línea representada por la ecuación $2y - 3x = 4$ tiene una pendiente de

(1) $-\dfrac{3}{2}$ (3) 3

(2) 2   (4) $\dfrac{3}{2}$

13 ¿Cuál es el conjunto de soluciones del sistema de ecuaciones $x + y = 5$ y $y = x^2 - 25$?

(1) $\{(0,5), (11,-6)\}$ (3) $\{(-5,0), (6,11)\}$

(2) $\{(5,0), (-6,11)\}$ (4) $\{(-5,10), (6,-1)\}$

14 ¿Cuál es el vértice de la parábola representada por la ecuación $y = -2x^2 + 24x - 100$?

(1) $x = -6$ (3) $(6, -28)$

(2) $x = 6$ (4) $(-6, -316)$

15 Si $k = am + 3mx$, el valor de m en términos de a, k y x se puede expresar como

(1) $\dfrac{k}{a + 3x}$ (3) $\dfrac{k - am}{3x}$

(2) $\dfrac{k - 3mx}{a}$ (4) $\dfrac{k - a}{3x}$

16 ¿Qué expresión representa $\dfrac{x^2 - 3x - 10}{x^2 - 25}$ en la forma más simple?

(1) $\dfrac{2}{5}$ (3) $\dfrac{x - 2}{x - 5}$

(2) $\dfrac{x + 2}{x + 5}$ (4) $\dfrac{-3x - 10}{-25}$

17 ¿Qué notación por intervalos describe el conjunto $S = \{x \mid 1 \leq x < 10\}$?

(1) $[1, 10]$ (3) $[1, 10)$

(2) $(1, 10]$ (4) $(1, 10)$

18 El blanco de un tablero de dardos tiene un radio de 2 pulgadas y todo el tablero tiene un radio de 9 pulgadas, como se muestra en el diagrama a continuación.

Si se lanza un dardo y pega en el tablero, ¿cuál es la probabilidad de que el dardo caiga en el blanco?

(1) $\dfrac{2}{9}$ (3) $\dfrac{4}{81}$

(2) $\dfrac{7}{9}$ (4) $\dfrac{49}{81}$

19 ¿Cuánto es un tercio de 3^6?

(1) 1^2 (3) 3^5

(2) 3^2 (4) 9^6

20 La expresión $\dfrac{2x + 13}{2x + 6} - \dfrac{3x - 6}{2x + 6}$ es equivalente a

(1) $\dfrac{-x + 19}{2(x + 3)}$ (3) $\dfrac{5x + 19}{2(x + 3)}$

(2) $\dfrac{-x + 7}{2(x + 3)}$ (4) $\dfrac{5x + 7}{4x + 12}$

21 ¿Qué ecuación está representada por el gráfico a continuación?
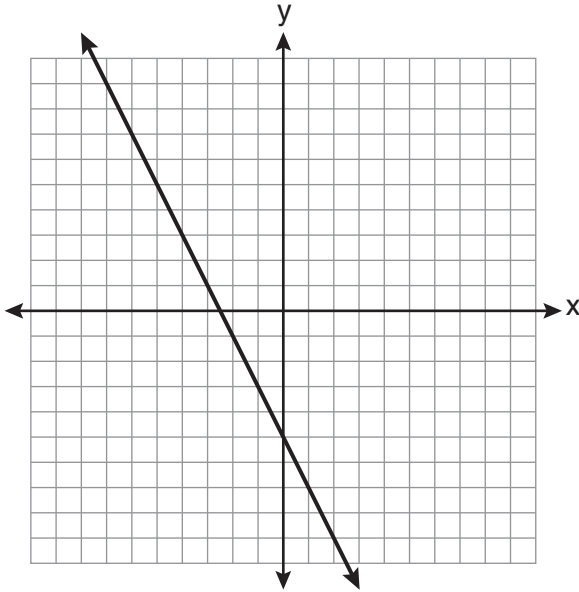
(1) $2y + x = 10$

(2) $y - 2x = -5$

(3) $-2y = 10x - 4$

(4) $2y = -4x - 10$

22 ¿Qué coordenadas representan un punto en el conjunto de soluciones del sistema de desigualdades que se muestra a continuación?

$$y \leq \frac{1}{2}x + 13$$
$$4x + 2y > 3$$

(1) $(-4,1)$

(2) $(-2,2)$

(3) $(1,-4)$

(4) $(2,-2)$

23 La longitud de un lado de un cuadrado es 13 pies. ¿Cuál es la longitud, al *pie más cercano*, de una diagonal del cuadrado?

(1) 13   (3) 19

(2) 18   (4) 26

24 En $\triangle ABC$, m$\angle C = 90$. Si $AB = 5$ y $AC = 4$, ¿qué enunciado *no* es verdadero?

(1) $\cos A = \dfrac{4}{5}$ (3) $\operatorname{sen} B = \dfrac{4}{5}$

(2) $\tan A = \dfrac{3}{4}$ (4) $\tan B = \dfrac{5}{3}$

25 Si n es un número entero impar, ¿qué ecuación se puede usar para hallar tres números enteros impares consecutivos cuya suma es -3?

(1) $n + (n + 1) + (n + 3) = -3$

(2) $n + (n + 1) + (n + 2) = -3$

(3) $n + (n + 2) + (n + 4) = -3$

(4) $n + (n + 2) + (n + 3) = -3$

26 Cuando $8x^2 + 3x + 2$ se resta de $9x^2 - 3x - 4$, el resultado es

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

(2) $17x^2 - 2$ (4) $x^2 - 6x - 6$

27 Factorizada completamente, la expresión $3x^3 - 33x^2 + 90x$ es equivalente a

(1) $3x(x^2 - 33x + 90)$ (3) $3x(x + 5)(x + 6)$

(2) $3x(x^2 - 11x + 30)$ (4) $3x(x - 5)(x - 6)$

28 Elizabeth está horneando galletas con chispas de chocolate. Para una sola hornada se usa $\frac{3}{4}$ de cucharadita de vainilla. Si Elizabeth mezcla los ingredientes para cinco hornadas a la vez, ¿cuántas cucharadas de vainilla deberá usar?

$$\boxed{3 \text{ cucharaditas} = 1 \text{ cucharada}}$$

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

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

29 Un automóvil se deprecia (pierde valor) a una tasa del 4.5% anual. Greg compró un automóvil por $12,500. ¿Qué ecuación se puede usar para determinar el valor del automóvil, V, después de 5 años?

(1) $V = 12{,}500(0.55)^5$ (3) $V = 12{,}500(1.045)^5$

(2) $V = 12{,}500(0.955)^5$ (4) $V = 12{,}500(1.45)^5$

30 La siguiente tabla de frecuencia acumulativa muestra el período de tiempo que pasaron 30 estudiantes enviando mensajes de texto en un fin de semana.

Minutos usados	Frecuencia acumulativa
31–40	2
31–50	5
31–60	10
31–70	19
31–80	30

¿Qué intervalo de 10 minutos contiene el primer cuartil?

(1) 31–40   (3) 51–60

(2) 41–50   (4) 61–70

Responda las 3 preguntas de esta parte. Cada respuesta correcta recibirá 2 créditos. Indique claramente los pasos necesarios, incluyendo apropiadamente las sustituciones de fórmulas, diagramas, gráficos, tablas, etc. Para todas las preguntas en esta parte, una respuesta numérica correcta sin demostrar el trabajo recibirá solamente 1 crédito. Todas las respuestas deben escribirse con bolígrafo de tinta permanente, con excepción de los gráficos y los dibujos, que deben hacerse con lápiz grafito. [6]

31 Resuelva algebraicamente el siguiente sistema de ecuaciones para y:

$$2x + 2y = 9$$
$$2x - y = 3$$

32 Tres recipientes de almacenamiento contienen bloques de colores. El recipiente 1 contiene 15 bloques rojos y 14 bloques azules. El recipiente 2 contiene 16 bloques blancos y 15 bloques azules. El recipiente 3 contiene 15 bloques rojos y 15 bloques blancos. Se colocan todos los bloques de los tres recipientes en una sola caja.

Si se selecciona un bloque de la caja al azar, ¿qué color de bloque tendría más posibilidades de ser escogido? Justifique su respuesta.

33 Los estudiantes calcularon el área de un campo de juego en 8,100 pies cuadrados. El área real del campo es de 7,678.5 pies cuadrados. Encuentre el error relativo en el área, a la *milésima más cercana*.

Responda las 3 preguntas de esta parte. Cada respuesta correcta recibirá 3 créditos. Indique claramente los pasos necesarios, incluyendo apropiadamente las sustituciones de fórmulas, diagramas, gráficos, tablas, etc. Para todas las preguntas en esta parte, una respuesta numérica correcta sin demostrar el trabajo recibirá solamente 1 crédito. Todas las respuestas deben escribirse con bolígrafo de tinta permanente, con excepción de los gráficos y los dibujos, que deben hacerse con lápiz grafito. [9]

34 En el conjunto de ejes que se muestra a continuación, grafique la ecuación $y = x^2 + 2x - 8$.

Usando el gráfico, determine e indique las raíces de la ecuación $x^2 + 2x - 8 = 0$.
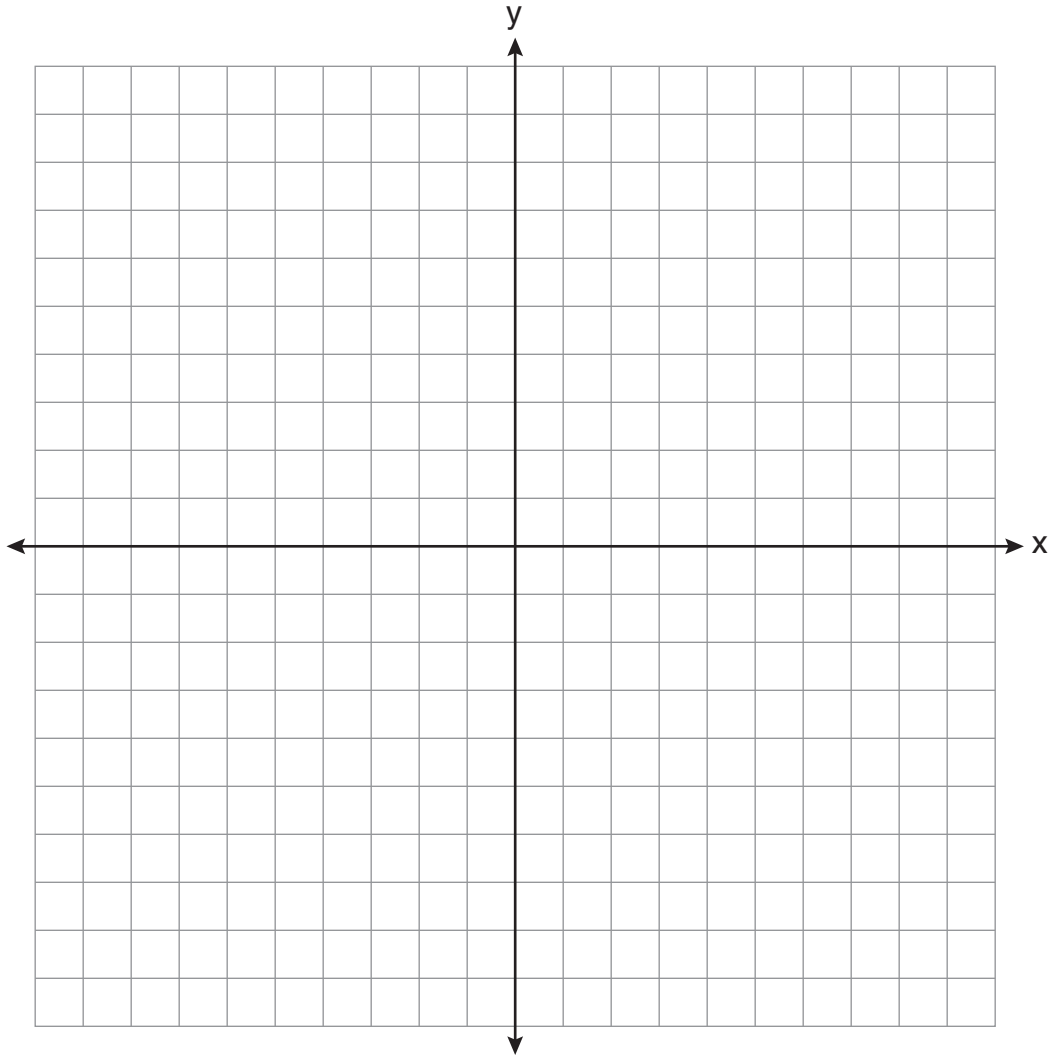
35 Una escalera de 28 pies está apoyada contra una casa. La parte inferior de la escalera está a 6 pies de la base de la casa. Encuentre la medida del ángulo que forman la escalera y el piso, al *grado más cercano*.

36 Exprese $\dfrac{3\sqrt{75} + \sqrt{27}}{3}$ en la forma radical más simple.

Parte IV

Responda las 3 preguntas de esta parte. Cada respuesta correcta recibirá 4 créditos. Indique claramente los pasos necesarios, incluyendo apropiadamente las sustituciones de fórmulas, diagramas, gráficos, tablas, etc. Para todas las preguntas en esta parte, una respuesta numérica correcta sin demostrar el trabajo recibirá solamente 1 crédito. Todas las respuestas deben escribirse con bolígrafo de tinta permanente, con excepción de los gráficos y los dibujos, que deben hacerse con lápiz grafito.   [12]

37 Mike compra su helado envasado en un cartón con forma de prisma rectangular, mientras que Carol compra el suyo en un cartón con forma cilíndrica. Las dimensiones del prisma son 5 pulgadas por 3.5 pulgadas por 7 pulgadas. El cilindro tiene un diámetro de 5 pulgadas y una altura de 7 pulgadas.

¿Qué recipiente contiene más helado? Justifique su respuesta.

Determine, a la *décima más cercana de una pulgada cúbica,* cuánto helado *más* contiene el recipiente más grande.

38 Resuelva algebraicamente el valor para x: $3(x + 1) - 5x = 12 - (6x - 7)$

39 Una compañía grande debe elegir entre dos tipos de contraseñas para iniciar sesión en una computadora. El primer tipo es una contraseña de cuatro letras que usa cualquiera de las 26 letras del abecedario, sin repetir las letras. El segundo tipo es una contraseña de seis dígitos del 0 al 9, que permite repetir dígitos.

Determine la cantidad de contraseñas posibles de cuatro letras.

Determine la cantidad de contraseñas posibles de seis dígitos.

La compañía tiene 500,000 empleados y necesita una contraseña diferente para cada empleado. Establezca qué tipo de contraseña debería escoger la compañía. Explique su respuesta.

Papel cuadriculado de borrador — Esta hoja *no* será calificada.

Hoja de referencia

Razones trigonométricas

$$\operatorname{sen} A = \frac{opuesto}{hipotenusa}$$

$$\cos A = \frac{adyacente}{hipotenusa}$$

$$\tan A = \frac{opuesto}{adyacente}$$

Área

trapecio $\quad A = \frac{1}{2}h(b_1 + b_2)$

Volumen

cilindro $\quad V = \pi r^2 h$

Área de superficie

prisma rectangular $\quad SA = 2lw + 2hw + 2lh$

cilindro $\quad SA = 2\pi r^2 + 2\pi rh$

Geometría analítica

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

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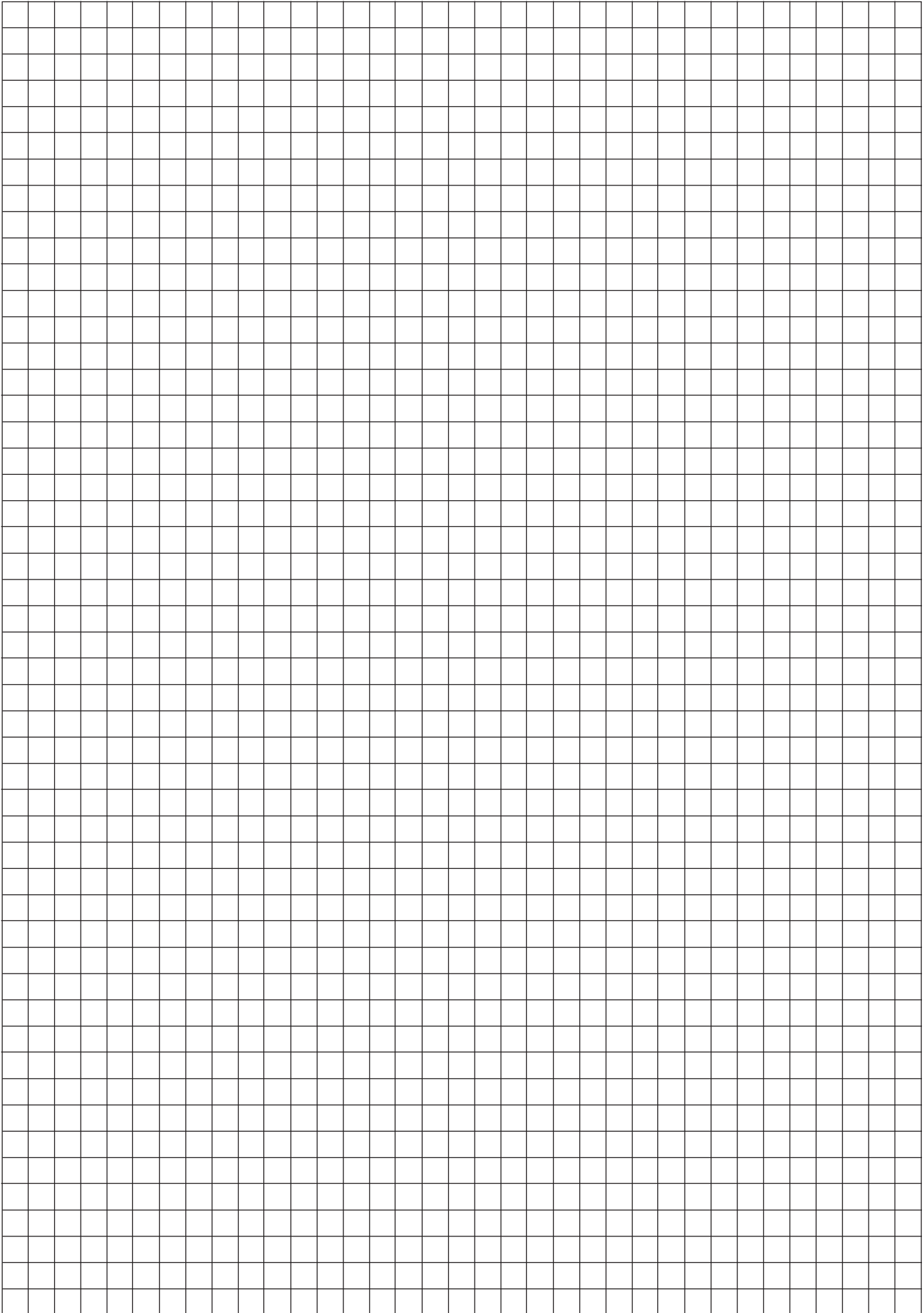
Desprender por la línea perforada

Desprender por la línea perforada

FOR TEACHERS ONLY

INTEGRATED ALGEBRA

SCORING KEY AND RATING GUIDE

Mechanics of Rating

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

Do *not* attempt to correct the student's work by making insertions or changes of any kind. In scoring the open-ended questions, use check marks to indicate student errors. If the student's responses for the multiple-choice questions are being hand scored prior to being scanned, the scorer must be careful not to make any stray marks on the answer sheet that might later interfere with the accuracy of the scanning.

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. No one teacher is to score more than approximately one-third of the open-ended questions on a student's paper. On the student's separate answer sheet, for each question, record the number of credits earned and the teacher's assigned rater/scorer letter.

Schools are not permitted to rescore any of the open-ended questions on this exam after each question has been rated once, regardless of the final exam score. Schools are required to ensure that the raw scores have been added correctly and that the resulting scale score has been determined accurately.

Raters should record the student's scores for all questions and the total raw score on the student's separate answer sheet. Then the student's total raw score should be converted to a scale score by using the conversion chart that will be posted on the Department's web site at: http://www.p12.nysed.gov/apda/ on Thursday, June 14, 2012. Because scale scores corresponding to raw scores in the conversion chart may change from one administration 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 student's scale score should be entered in the box provided on the student's separate answer sheet. The scale 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	11 . . . . . 3	21 . . . . . 4 . . . . .
2 . . . . . 2	12 . . . . . 4	22 . . . . . 4 . . . . .
3 . . . . . 4	13 . . . . . 2	23 . . . . . 2 . . . . .
4 . . . . . 1	14 . . . . . 3	24 . . . . . 4 . . . . .
5 . . . . . 2	15 . . . . . 1	25 . . . . . 3 . . . . .
6 . . . . . 3	16 . . . . . 2	26 . . . . . 4 . . . . .
7 . . . . . 4	17 . . . . . 3	27 . . . . . 4 . . . . .
8 . . . . . 3	18 . . . . . 3	28 . . . . . 1 . . . . .
9 . . . . . 1	19 . . . . . 3	29 . . . . . 2 . . . . .
10 . . . . . 3	20 . . . . . 1	30 . . . . . 3 . . . . .

General Rules for Applying Mathematics Rubrics

I. General Principles for Rating

The rubrics for the constructed-response questions on the Regents Examination in Integrated Algebra 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*, use their own professional judgment, confer with other mathematics teachers, and/or contact 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, graphs, 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 2 credits. Unless otherwise specified, mathematically correct alternative solutions should be awarded appropriate credit.

(31) **[2]** 2, and appropriate algebraic work is shown.

[1] Appropriate work is shown, but one computational error is made, but an appropriate value for y is found.

or

[1] Appropriate work is shown, but one conceptual error is made, but an appropriate value for y is found.

or

[1] Appropriate work is shown to find $x = 2\frac{1}{2}$, but no further correct work is shown.

or

[1] 2, but a method other than algebraic is used.

or

[1] 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.

(32) **[2]** White, and an appropriate justification is given.

[1] One computational error is made, but an appropriate color is stated, and an appropriate justification is given.

or

[1] One conceptual error is made, but an appropriate color is stated, and an appropriate justification is given.

or

[1] White, but no justification or an incorrect justification is given.

[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]** 0.055, and appropriate work is shown.

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

or

[1] Appropriate work is shown, but one conceptual error is made, such as dividing by 8,100, but an appropriate relative error is found.

or

[1] $\dfrac{8,100 - 7,678.5}{7,678.5}$ or an equivalent fraction is written, but no further correct work is shown.

or

[1] 0.055, 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 3 credits. Unless otherwise specified, mathematically correct alternative solutions should be awarded appropriate credit.

(34)   **[3]** The equation is graphed correctly, and −4 and 2 are stated.

   [2] Appropriate work is shown, but one computational or graphing error is made, but appropriate roots are stated.

or

   [2] Appropriate work is shown, but only one root is stated correctly.

or

   [2] Appropriate work is shown, but the roots are stated as (−4,0) and (2,0).

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

or

   [1] Appropriate work is shown, but one conceptual error is made, but appropriate roots are stated.

or

   [1] The equation is graphed correctly, but the roots are not stated or are stated incorrectly.

or

   [1] −4 and 2, but a method other than graphic is used.

or

   [1] −4 and 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.

(35)   **[3]** 78, and appropriate work is shown.

[2] Appropriate work is shown, but one computational or rounding error is made, but an appropriate angle measure is stated.

or

[2] Appropriate work is shown to find $\cos x = \dfrac{6}{28}$ or an equivalent equation, but no further correct work is shown.

[1] Appropriate work is shown, but two or more computational or rounding errors are made, but an appropriate angle measure is stated.

or

[1] Appropriate work is shown, but one conceptual error is made, such as using an incorrect trigonometric equation or an incorrectly labeled diagram, but an appropriate angle measure is stated.

or

[1] A correct triangle is drawn and labeled appropriately, but no further correct work is shown.

or

[1] 78, 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.

(36)   **[3]** $6\sqrt{3}$, and appropriate work is shown.

    [2] Appropriate work is shown, but one computational or simplification error is made, but an appropriate solution is stated.

or

    [2] Appropriate work is shown to find $\dfrac{18\sqrt{3}}{3}$, but no further correct work is shown.

    [1] Appropriate work is shown, but two or more computational or simplification errors are made, but an appropriate solution is stated.

or

    [1] Appropriate work is shown, but one conceptual error is made, but an appropriate solution is stated.

or

    [1] Appropriate work is shown to find $\dfrac{15\sqrt{3}+3\sqrt{3}}{3}$, but no further correct work is shown.

or

    [1] Appropriate work is shown to find $\dfrac{3\sqrt{75}}{3}=5\sqrt{3}$ or $\dfrac{\sqrt{27}}{3}=\sqrt{3}$ or $3\sqrt{75}+\sqrt{27}=18\sqrt{3}$, but no further correct work is shown.

or

    [1] $6\sqrt{3}$, but no work is shown.

    [0] The answer is expressed as a decimal, and 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.

Part IV

For each question, use the specific criteria to award a maximum of 4 credits. Unless otherwise specified, mathematically correct alternative solutions should be awarded appropriate credit.

(37) **[4]** Cylinder or Carol's, and an appropriate justification is given, and 14.9, and appropriate work is shown.

[3] Appropriate work is shown, but one computational or rounding error is made, but an appropriate container, justification, and difference are given.

or

[3] Appropriate work is shown to find both volumes and 14.9, but no container is selected.

or

[3] Appropriate work is shown, cylinder is stated, and an appropriate justification is given, but no further correct work is shown.

[2] Appropriate work is shown, but two or more computational or rounding errors are made, but an appropriate container, justification, and difference are given.

or

[2] Appropriate work is shown, but one conceptual error is made, but an appropriate container, justification, and difference are given.

or

[2] Appropriate work is shown to find both volumes, but no further correct work is shown.

[1] Appropriate work is shown, but one conceptual error and one computational or rounding error are made, but an appropriate container, justification, and difference are given.

or

[1] Appropriate work is shown to find the correct volume for either the rectangular prism or the cylinder, but no further correct work is shown.

or

[1] Cylinder and 14.9, but no work is shown.

[0] Cylinder, 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.

(38) **[4]** 4, and appropriate algebraic work is shown.

[3] Appropriate work is shown, but one computational error is made, but an appropriate solution is stated.

[2] Appropriate work is shown, but two or more computational errors are made, but an appropriate solution is stated.

or

[2] Appropriate work is shown, but one conceptual error is made, but an appropriate solution is stated.

or

[2] Appropriate work is shown to find $-2x + 3 = 19 - 6x$, but no further correct work is shown.

or

[2] 4, but a method other than algebraic is used.

[1] Appropriate work is shown, but one conceptual error and one computational error are made, but an appropriate solution is stated.

or

[1] $3x + 3 - 5x = 12 - 6x + 7$ is written, but no further correct work is shown.

or

[1] 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.

(39) **[4]** 358,800 and 1,000,000, and six-digit or numeric password, and appropriate work is shown, and an appropriate explanation is written.

[3] Appropriate work is shown, but one computational error is made, but appropriate solutions are stated, and an appropriate choice and explanation are written.

or

[3] Appropriate work is shown to find 358,800 and 1,000,000, and six-digit password, but an explanation is missing or is incorrect.

or

[3] Appropriate work is shown to find 1,000,000 and six-digit password, and an appropriate explanation is written, but no further correct work is shown.

[2] Appropriate work is shown, but two or more computational errors are made, but appropriate solutions are stated, and an appropriate choice and explanation are written.

or

[2] Appropriate work is shown, but one conceptual error is made, but appropriate solutions are stated, and an appropriate choice and explanation are written.

or

[2] Appropriate work is shown to find 358,800 and 1,000,000, but no further correct work is shown.

or

[2] Appropriate work is shown to find 1,000,000 and six-digit password, but no further correct work is shown.

or

[2] 358,800 and 1,000,000, and six-digit password, but no work is shown, but an appropriate explanation is written.

[1] Appropriate work is shown, but one conceptual error and one computational error are made, but appropriate solutions are stated, and an appropriate choice and explanation are written.

or

[1] Appropriate work is shown to find 358,800 or 1,000,000, but no further correct work is shown.

or

[1] 358,800 and 1,000,000, and six-digit password, but no work is shown, and no explanation is written.

[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 Core Curriculum

Content Strands	Item Numbers
Number Sense and Operations	36, 39
Algebra	3, 4, 8, 10, 11, 13, 14, 15, 16, 17, 19, 20, 22, 23, 24, 25, 26, 27, 29, 31, 35, 38
Geometry	9, 12, 21, 34, 37
Measurement	1, 28, 33
Statistics and Probability	2, 5, 6, 7, 18, 30, 32

Regents Examination in Integrated Algebra

June 2012

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

The *Chart for Determining the Final Examination Score for the June 2012 Regents Examination in Integrated Algebra* will be posted on the Department's web site at: http://www.p12.nysed.gov/apda/ on Thursday, June 14, 2012. Conversion charts provided for previous administrations of the Regents Examination in Integrated Algebra must NOT be used to determine students' final scores for this administration.

Online Submission of 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 http://www.forms2.nysed.gov/emsc/osa/exameval/reexameval.cfm.

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.

Regents Examination in Integrated Algebra – June 2012

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

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

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 scale score that corresponds to that raw score. The scale score is the student's final examination score. Enter this score in the space labeled "Scale Score" on the student's answer sheet.

Schools are not permitted to rescore any of the open-ended questions on this exam after each question has been rated once, regardless of the final exam score. Schools are required to ensure that the raw scores have been added correctly and that the resulting scale score has been determined accurately.

Because scale scores corresponding to raw scores in the conversion chart change from one administration 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 Regents Examination in Integrated Algebra.