

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

ÁLGEBRA INTEGRADA

Jueves, 29 de enero de 2009 – 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 de 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.

Las fórmulas que podría necesitar para contestar algunas preguntas de este examen se encuentran al final de este examen. La hoja está perforada para que pueda removerla de este folleto.

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 directamente en este folleto. Indique claramente los pasos necesarios, incluyendo las sustituciones apropiadas 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...

Una calculadora para hacer gráficos y una regla 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 EXAMEN HASTA QUE SE LE INDIQUE.

**Utilice este espacio
para sus cálculos.**

7 En sus primeros seis exámenes de álgebra, Alex obtuvo calificaciones de 60, 74, 82, 87, 87 y 94. ¿Cuál es la relación entre las medidas de tendencia central de estas calificaciones?

- (1) mediana < modo < media (3) modo < mediana < media
(2) media < modo < mediana (4) media < mediana < modo

8 La Asociación de Voleibol de Nueva York invitó a 64 equipos a competir en un torneo. Después de cada ronda, la mitad de los equipos fueron eliminados. ¿Qué ecuación representa la cantidad de equipos, t , que permanecieron en el torneo luego de r rondas?

- (1) $t = 64(r)^{0.5}$ (3) $t = 64(1.5)^r$
(2) $t = 64(-0.5)^r$ (4) $t = 64(0.5)^r$

9 La expresión $9x^2 - 100$ es equivalente a

- (1) $(9x - 10)(x + 10)$ (3) $(3x - 10)(3x - 1)$
(2) $(3x - 10)(3x + 10)$ (4) $(9x - 100)(x + 1)$

10 ¿Cuál es la ecuación de la línea que atraviesa los puntos $(3, -3)$ y $(-3, -3)$?

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

**Utilice este espacio
para sus cálculos.**

11 Si la fórmula del perímetro de un rectángulo es $P = 2l + 2w$, entonces w se puede expresar como

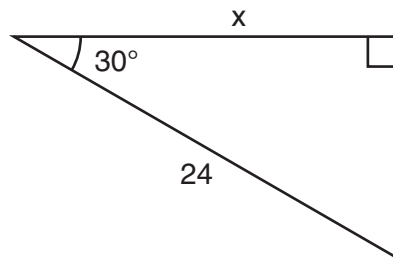
(1) $w = \frac{2l - P}{2}$

(3) $w = \frac{P - l}{2}$

(2) $w = \frac{P - 2l}{2}$

(4) $w = \frac{P - 2w}{2l}$

12 En el triángulo recto que se muestra en el diagrama a continuación, ¿cuál es el valor de x al *número entero más cercano*?



(1) 12

(3) 21

(2) 14

(4) 28

13 ¿Cuál es la pendiente de la línea que atraviesa los puntos $(2,5)$ y $(7,3)$?

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

(3) $\frac{8}{9}$

(2) $-\frac{2}{5}$

(4) $\frac{9}{8}$

**Utilice este espacio
para sus cálculos.**

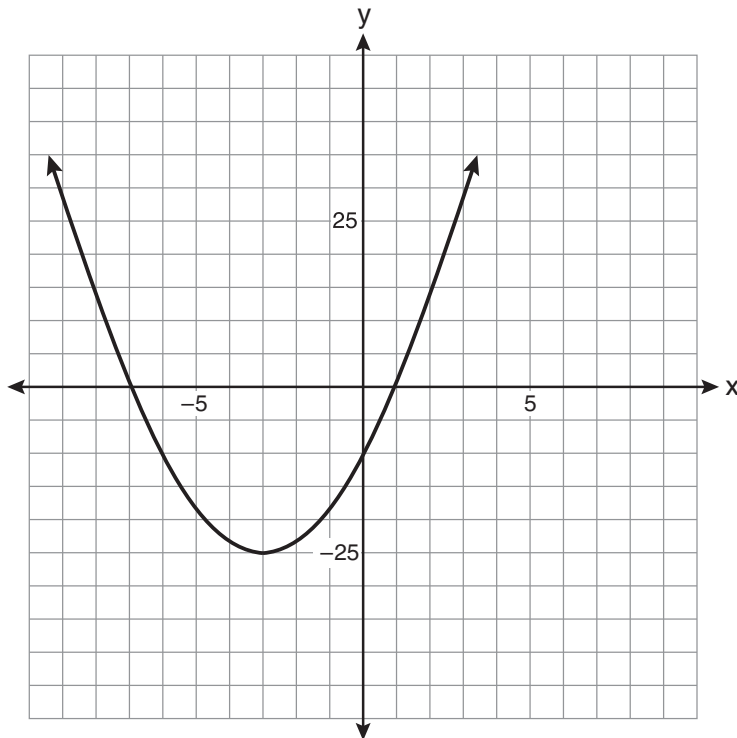
14 ¿Cuáles son las raíces de la ecuación $x^2 - 10x + 21 = 0$?

- (1) 1 y 21 (3) 3 y 7
(2) -5 y -5 (4) -3 y -7

15 Rhonda tiene \$1.35 en monedas de cinco y diez centavos en el bolsillo. Si ella tiene seis monedas más de 10 centavos que de 5 centavos, ¿qué ecuación se puede utilizar para determinar el valor de x , es decir, la cantidad de monedas de cinco centavos que tiene?

- (1) $0.05(x + 6) + 0.10x = 1.35$
(2) $0.05x + 0.10(x + 6) = 1.35$
(3) $0.05 + 0.10(6x) = 1.35$
(4) $0.15(x + 6) = 1.35$

16 ¿Qué ecuación representa el eje de simetría del gráfico de la siguiente parábola?



- (1) $y = -3$ (3) $y = -25$
(2) $x = -3$ (4) $x = -25$

**Utilice este espacio
para sus cálculos.**

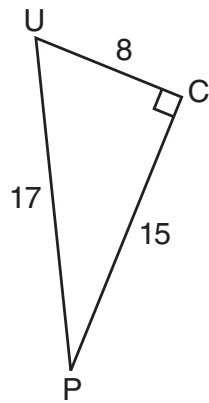
17 El conjunto $\{1,2,3,4\}$ es equivalente a

- (1) $\{x \mid 1 < x < 4, \text{ donde } x \text{ es un número entero}\}$
- (2) $\{x \mid 0 < x < 4, \text{ donde } x \text{ es un número entero}\}$
- (3) $\{x \mid 0 < x \leq 4, \text{ donde } x \text{ es un número entero}\}$
- (4) $\{x \mid 1 < x \leq 4, \text{ donde } x \text{ es un número entero}\}$

18 ¿Cuál es el valor de x en la ecuación $\frac{2}{x} - 3 = \frac{26}{x}$?

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

19 El siguiente diagrama muestra el triángulo recto UPC .



¿Qué razón representa el seno de $\angle U$?

- (1) $\frac{15}{8}$
- (2) $\frac{15}{17}$
- (3) $\frac{8}{15}$
- (4) $\frac{8}{17}$

**Utilice este espacio
para sus cálculos.**

20 ¿Cuál es la $\sqrt{72}$ expresada en la forma radical más simple?

(1) $2\sqrt{18}$

(3) $6\sqrt{2}$

(2) $3\sqrt{8}$

(4) $8\sqrt{3}$

21 ¿Cuál es $\frac{6}{5x} - \frac{2}{3x}$ en la forma más simple?

(1) $\frac{8}{15x^2}$

(3) $\frac{4}{15x}$

(2) $\frac{8}{15x}$

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

22 ¿Qué par ordenado es una solución del sistema de ecuaciones $y = x^2 - x - 20$ e $y = 3x - 15$?

(1) $(-5, -30)$

(3) $(0, 5)$

(2) $(-1, -18)$

(4) $(5, -1)$

23 Se está llevando a cabo una encuesta para determinar qué tipos de programas de televisión mira la gente. ¿Qué combinación de encuesta y local será probablemente la más parcial (más desfavorable)?

(1) Encuestar a 10 personas que trabajen en una tienda de artículos deportivos.

(2) Encuestar a las primeras 25 personas que ingresen a una tienda de alimentos.

(3) Encuestar al azar a 50 personas en un centro comercial a lo largo del día.

(4) Encuestar al azar a 75 personas en una tienda de ropa a lo largo del día.

**Utilice este espacio
para sus cálculos.**

24 El largo de una habitación rectangular es 7 menos que tres veces el ancho, w , de la habitación. ¿Qué expresión representa el área de la habitación?

(1) $3w - 4$

(3) $3w^2 - 4w$

(2) $3w - 7$

(4) $3w^2 - 7w$

25 La función $y = \frac{x}{x^2 - 9}$ no está definida cuando el valor de x es

(1) 0 ó 3

(3) 3, solamente

(2) 3 o -3

(4) -3, solamente

26 ¿Qué ecuación representa una línea que es paralela a la línea $y = 3 - 2x$?

(1) $4x + 2y = 5$

(3) $y = 3 - 4x$

(2) $2x + 4y = 1$

(4) $y = 4x - 2$

**Utilice este espacio
para sus cálculos.**

27 ¿Cuál es el producto de 8.4×10^8 y 4.2×10^3 escrito en notación científica?

(1) 2.0×10^5

(3) 35.28×10^{11}

(2) 12.6×10^{11}

(4) 3.528×10^{12}

28 Keisha está jugando con una rueda dividida en ocho sectores iguales, como se muestra en el diagrama a continuación. Cada vez que la flecha se detiene en el color naranja, gana un premio.



Si Keisha hace girar la rueda dos veces, ¿cuál es la probabilidad de que gane un premio en *ambos* giros?

(1) $\frac{1}{64}$

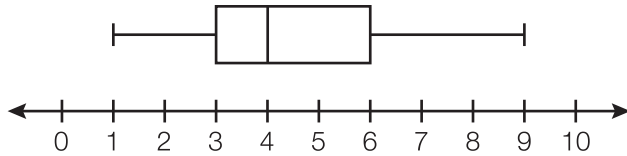
(3) $\frac{1}{16}$

(2) $\frac{1}{56}$

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

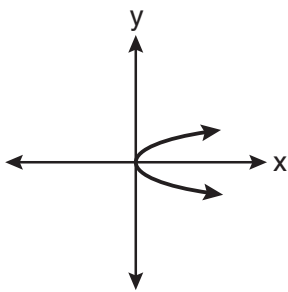
Utilice este espacio para sus cálculos.

- 29** Una sala de cine registró la cantidad de entradas que se vendieron diariamente para una película muy popular durante el mes de junio. El siguiente gráfico de cajas y líneas representa los datos de a la cantidad de entradas vendidas, en centenos.

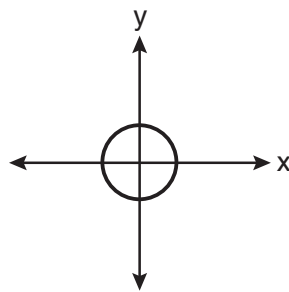


¿A qué conclusión se puede llegar por medio de este gráfico?

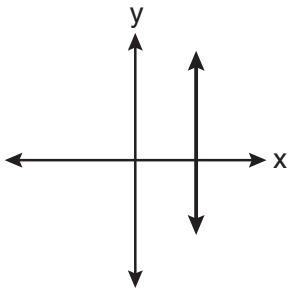
- (1) El segundo cuartil es 600.
 - (2) La media de la asistencia es 400.
 - (3) El rango de asistencia oscila entre 300 y 600.
 - (4) El veinticinco por ciento de la asistencia oscila entre 300 y 400.
- 30** ¿Qué gráfico representa una función?



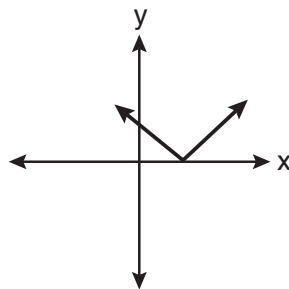
(1)



(3)



(2)



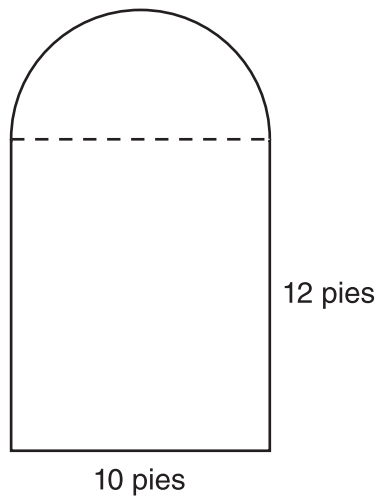
(4)

Parte II

Conteste todas las preguntas de esta parte. Cada respuesta correcta recibirá 2 puntos. Indique claramente los pasos necesarios, incluyendo las sustituciones apropiadas de fórmulas, diagramas, gráficos, tablas, etc. Para todas las preguntas de esta parte, una respuesta numérica correcta que no muestre el trabajo recibirá sólo un punto. [6]

- 31 Una ventana está hecha de una sola pieza de vidrio en forma de semicírculo y de rectángulo, como se muestra en el siguiente diagrama. Tess está decorando con motivo de una fiesta y quiere colocar un cordón de luces alrededor de todo el borde externo de la ventana.

Ventana



Si se redondea al *pie más cercano*, ¿cuál es la longitud de cordón de luces que necesitará Tess para decorar la ventana?

32 Simplifie: $\frac{27k^5m^8}{(4k^3)(9m^2)}$

33 La siguiente tabla representa la cantidad de horas que trabajó un estudiante y la cantidad de dinero que ganó.

Cantidad de horas (h)	Dólares ganados (d)
8	\$50.00
15	\$93.75
19	\$118.75
30	\$187.50

Escriba una ecuación que represente la cantidad de dólares, d , ganados en relación con la cantidad de horas, h , que trabajó.

Utilizando esta ecuación, determine la cantidad de dólares que ganaría el estudiante si trabajara 40 horas.

Parte III

Conteste todas las preguntas de esta parte. Cada respuesta correcta recibirá 3 puntos. Indique claramente los pasos necesarios, incluyendo las sustituciones apropiadas de fórmulas, diagramas, gráficos, tablas, etc. Para todas las preguntas de esta parte, una respuesta numérica correcta que no muestre el trabajo recibirá solamente un punto. [9]

34 Sarah midió la ventana rectangular de su habitación para colocar una persiana nueva. Las medidas son 36 pulgadas por 42 pulgadas. Las medidas reales de la ventana son 36.5 pulgadas por 42.5 pulgadas.

Utilizando las medidas que tomó Sarah, determine las pulgadas cuadradas que hay en el área de la ventana.

Determine las pulgadas cuadradas que hay en el área real de la ventana.

Determine el error relativo al calcular el área. Exprese su respuesta en decimales a la *milésima más cercana*.

35 Realice la operación indicada y simplifique: $\frac{3x + 6}{4x + 12} \div \frac{x^2 - 4}{x + 3}$

36 Una lata de sopa tiene forma cilíndrica. La lata tiene un volumen de 342 cm^3 y un diámetro de 6 cm. Exprese la altura de la lata en términos de π .

Determine la cantidad máxima de latas de sopa que se pueden parar sobre la base entre dos estantes si la distancia entre dichos estantes es exactamente de 36 cm. Justifique su respuesta.

Parte IV

Conteste todas las preguntas de esta parte. Cada respuesta correcta recibirá 4 puntos. Indique claramente los pasos necesarios, incluyendo las sustituciones apropiadas de fórmulas, diagramas, gráficos, tablas, etc. Para todas las preguntas de esta parte, una respuesta numérica correcta que no muestre el trabajo recibirá solamente un punto. [12]

37 Resuelva el siguiente sistema de ecuaciones algebraicas.

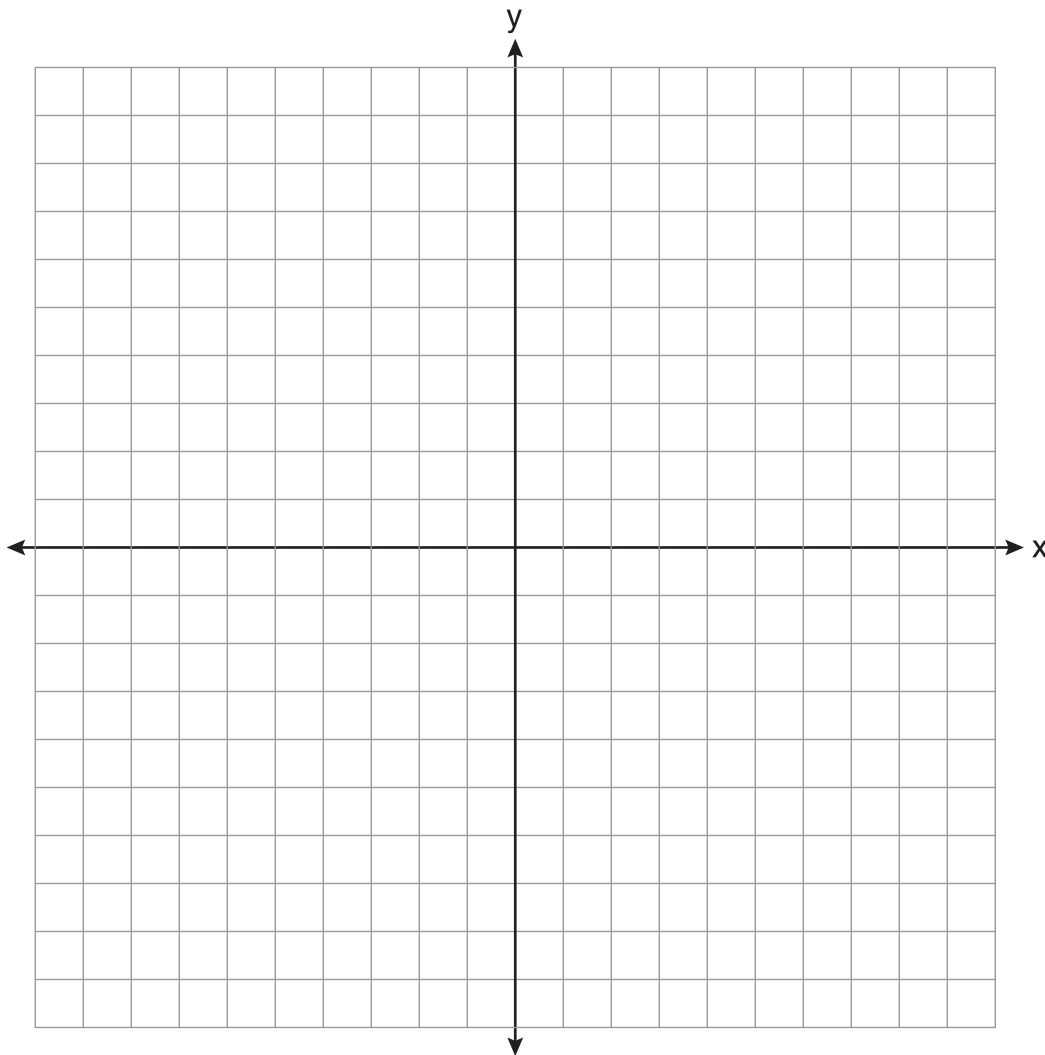
$$3x + 2y = 4$$

$$4x + 3y = 7$$

[Solamente una solución algebraica recibirá crédito total].

38 En el conjunto de ejes a continuación, dibuje la gráfica del siguiente sistema de desigualdades y establezca las coordenadas de un punto del conjunto de soluciones.

$$\begin{aligned} 2x - y &\geq 6 \\ x &> 2 \end{aligned}$$



39 Cierta restaurante ofrece opciones de menú para niños que consisten en un plato principal, una guarnición y una bebida, como se muestra en la siguiente tabla.

Opciones de menú para niños

Plato principal	Guarnición	Bebida
hamburguesa	papas fritas	leche
trocitos de pollo	puré de manzana	jugo
sándwich de pavo		refresco

Dibuje un diagrama de árbol o enumere las posibles opciones de menú para niños. ¿Cuántas opciones diferentes de menú para niños puede pedir una persona?

José no toma jugo. Determine cuántas opciones diferentes de menú para niños *no* incluyen jugo.

La hermana de José comerá solamente trocitos de pollo como plato principal. Determine cuántas opciones diferentes de menú para niños incluyen trocitos de pollo.

Hoja de referencia

Razones trigonométricas

$$\text{sen } A = \frac{\textit{opuesto}}{\textit{hipotenusa}}$$

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

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

Área

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

Volumen

cilindro $V = \pi r^2 h$

Área de superficie

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

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

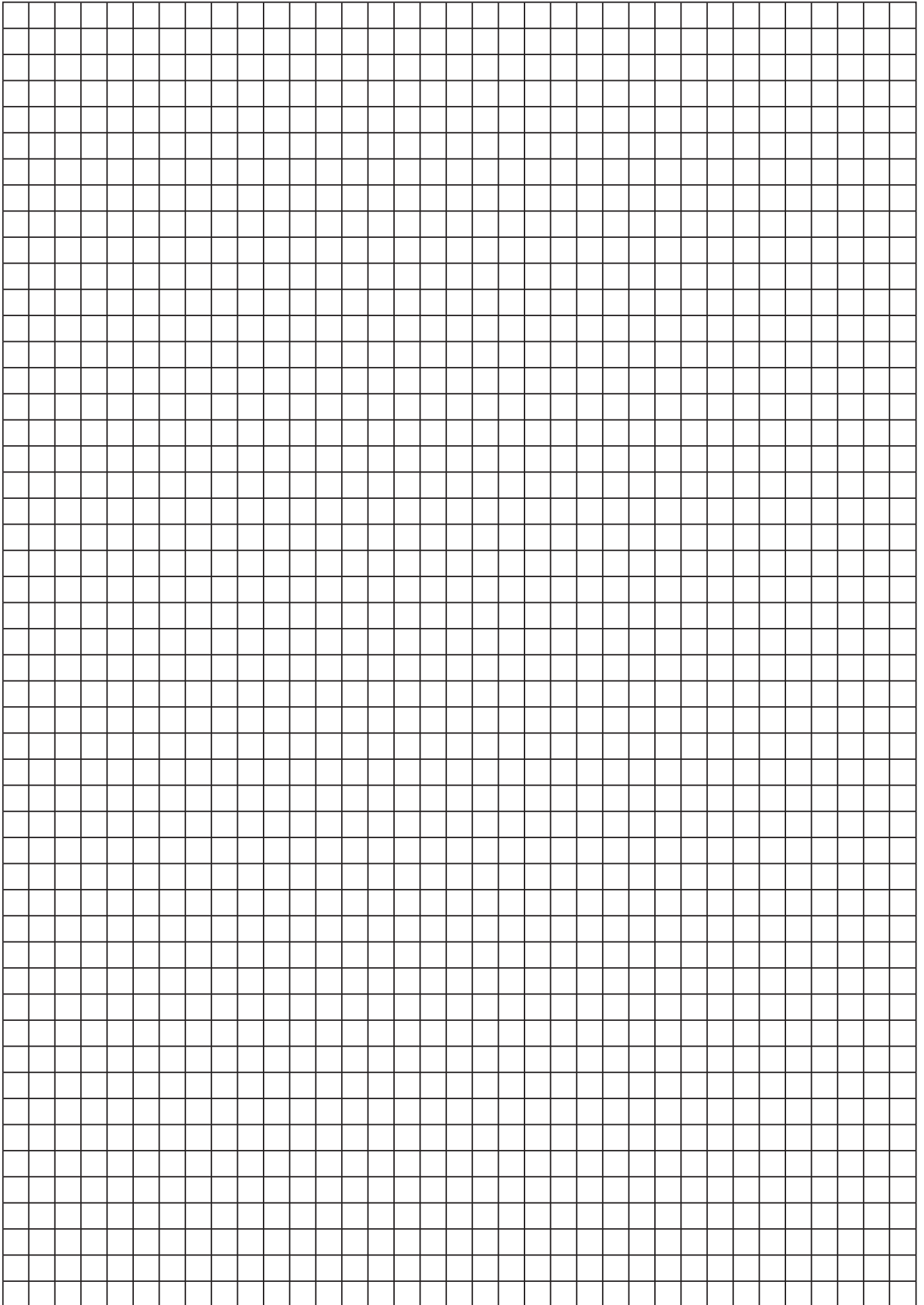
Geometría analítica

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

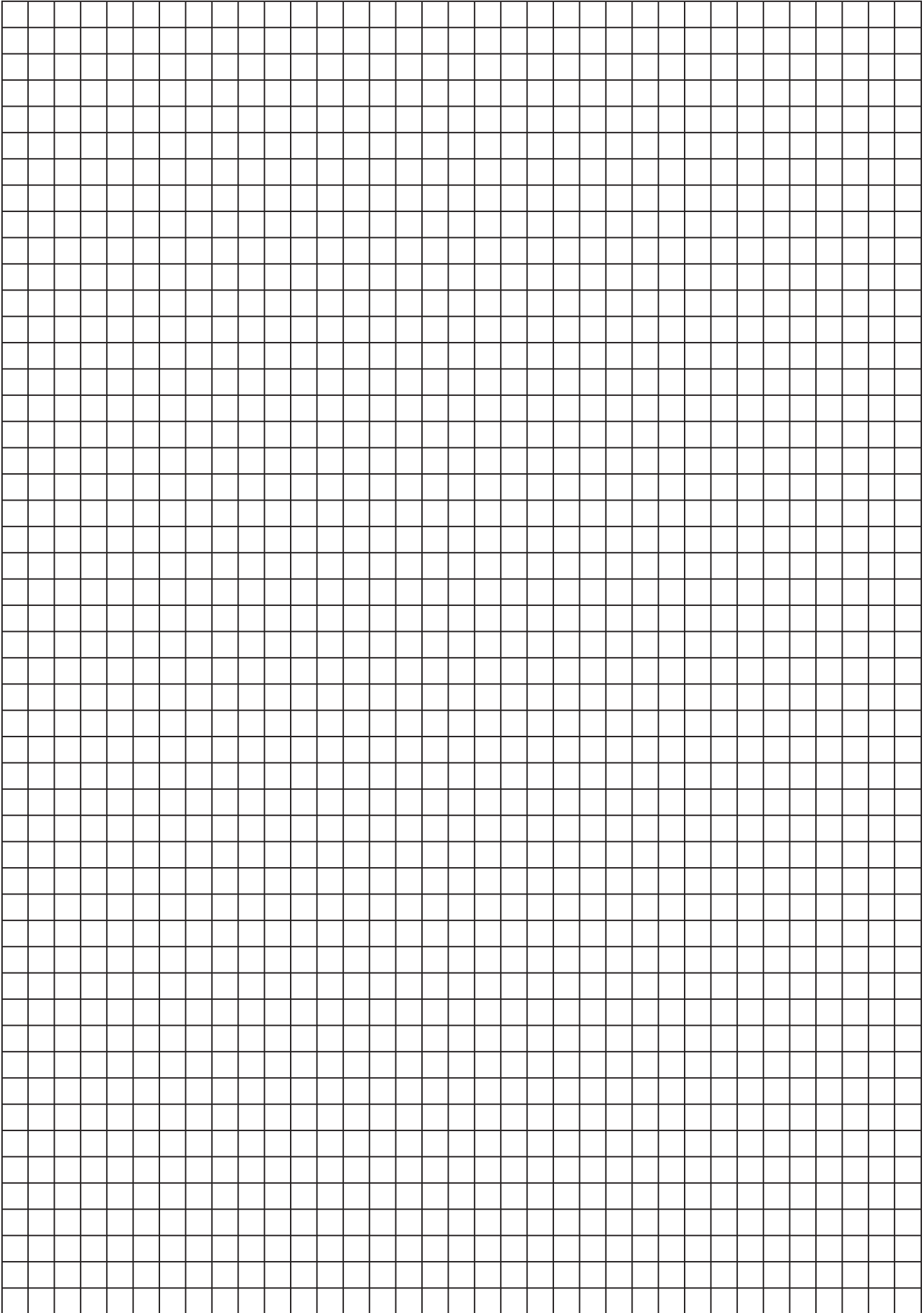
Papel borrador cuadrulado – Esta hoja *no* será calificada.

Desprender por la línea perforada.

Desprender por la línea perforada.



Papel borrador cuadrado – Esta hoja *no* será calificada.



Desprender por la línea perforada.

Desprender por la línea perforada.

Desprender por la línea perforada.

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REGENTS HIGH SCHOOL EXAMINATION

ÁLGEBRA INTEGRADA

Jueves, 29 de enero de 2009 – 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 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 las preguntas.

Firma

Desprender por la línea perforada.

FOR TEACHERS ONLY

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

INTEGRATED ALGEBRA

Thursday, January 29, 2009 — 1:15 to 4:15 p.m., only

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 Examination in Integrated Algebra*.

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 check marks 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 29, 2009. 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	(9) 2	(17) 3	(25) 2
(2) 4	(10) 3	(18) 1	(26) 1
(3) 4	(11) 2	(19) 2	(27) 4
(4) 1	(12) 3	(20) 3	(28) 1
(5) 1	(13) 2	(21) 2	(29) 4
(6) 3	(14) 3	(22) 2	(30) 4
(7) 4	(15) 2	(23) 1	
(8) 4	(16) 2	(24) 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 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 Examination in Integrated Algebra*, 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] 50, 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] 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.

(32) [2] $\frac{3k^2m^6}{4}$ or an equivalent answer, 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] $\frac{3k^2m^6}{4}$, 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.

INTEGRATED ALGEBRA – *continued*

(33) [2] $d = 6.25h$ or an equivalent equation and 250, 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] A correct equation is written, but no further correct work is shown.

or

[1] Appropriate work is shown to find 250, but the equation is missing or is incorrect.

[0] 250, 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.

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.

- (34) [3] 1,512 and 1,551.25 and 0.025, and appropriate work is shown.
- [2] Appropriate work is shown, but one computational or rounding error is made.
- [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, such as dividing by 1,512.
- or*
- [1] Appropriate work is shown to find 1,512 and 1,551.25, but no further correct work is shown.
- or*
- [1] 1,512 and 1,551.25 and 0.025, but no work is shown.
- [0] 1,512 or 1,551.25 or 0.025, 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.
- (35) [3] $\frac{3}{4x-8}$ or $\frac{3}{4(x-2)}$, and appropriate work is shown.
- [2] Appropriate work is shown, but one computational, factoring, or simplification error is made.
- [1] Appropriate work is shown, but two or more computational, factoring, or simplification errors are made.
- or*
- [1] Appropriate work is shown, but one conceptual error is made.
- or*
- [1] $\frac{3}{4x-8}$ or $\frac{3}{4(x-2)}$, 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.

(36) [3] $\frac{38}{\pi}$ or an equivalent answer in terms of π , and 2, and appropriate work is shown, and an appropriate explanation is given.

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

or

[2] Appropriate work is shown and an appropriate explanation is given, but the correct height of the can is expressed as a decimal.

or

[2] $\frac{38}{\pi}$ and 2, and appropriate work is shown, but an appropriate explanation is not given.

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

or

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

or

[1] $\frac{38}{\pi}$ and 2, but no work is shown.

[0] $\frac{38}{\pi}$ or 2, 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.

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.

(37) [4] $(-2,5)$ or $x = -2$ and $y = 5$, and appropriate algebraic work is shown.

[3] Appropriate algebraic work is shown, but one computational error is made, but appropriate values are found for x and y .

or

[3] $x = -2$ or $y = 5$, and appropriate algebraic work is shown.

[2] Appropriate algebraic work is shown, but two or more computational errors are made, but appropriate values are found for x and y .

or

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

or

[2] $(-2,5)$ or $x = -2$ and $y = 5$, but a method other than an algebraic method is used.

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

or

[1] The trial-and-error method is used to find the correct solution, but fewer than three trials and appropriate checks are shown.

or

[1] $x = -2$ or $y = 5$, but a method other than an algebraic method is used.

or

[1] $(-2,5)$ or $x = -2$ and $y = 5$, but no work is shown.

[0] $x = -2$ or $y = 5$, 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] Both inequalities are graphed and shaded correctly, and at least one is labeled, and a point in the solution set is identified.

[3] Appropriate work is shown, but one graphing error is made, such as drawing a solid line for $x > 2$ or shading incorrectly, but an appropriate point in the solution set is identified.

or

[3] Both inequalities are graphed and shaded correctly, and a point in the solution set is identified correctly, but the graphs are not labeled or are labeled incorrectly.

or

[3] Both inequalities are graphed and shaded correctly, and at least one is labeled, but no point in the solution set is identified.

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

or

[2] Appropriate work is shown, but one conceptual error is made, such as graphing the lines $x = 2$ and $y = 2x - 6$ and identifying the point of intersection.

or

[2] One of the inequalities is graphed and shaded correctly, and at least one is labeled, but no further correct work is shown.

[1] Appropriate work is shown, but one conceptual error and one graphing error are made, but an appropriate point in the solution set is identified.

or

[1] Both inequalities are graphed incorrectly, but an appropriate point in the solution set is identified.

or

[1] The lines $x = 2$ and $y = 2x - 6$ are graphed correctly, and at least one is labeled, but no further correct work is shown.

or

[1] A point in the solution set is identified and shown to be correct by checking in both inequalities, but no graphs are drawn.

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

INTEGRATED ALGEBRA – *continued*

(39) [4] A correct tree diagram or sample space is given, and 18 total meals, 12 meals without juice, and 6 meals with chicken nuggets.

[3] A correct tree diagram or sample space is given, but either 18, 12, or 6 is missing or is incorrect.

or

[3] The fundamental counting principle is used to find 18 total meals, 12 meals without juice, and 6 meals with chicken nuggets, but no tree diagram or sample space is given.

or

[3] An incorrect tree diagram or sample space is given, but an appropriate number of meals is found for all three categories.

[2] A correct tree diagram or sample space is given, but an appropriate number of meals is found for only one category.

or

[2] An incorrect tree diagram or sample space is given, but an appropriate number of meals is found for only two categories.

[1] A correct tree diagram or sample space is given, but no number of meals is found correctly.

or

[1] An incorrect tree diagram or sample space is given, but an appropriate number of meals is found for only one category.

or

[1] 18 total meals, 12 meals without juice, and 6 meals with chicken nuggets, but no work is shown.

[0] 18 total meals or 12 meals without juice or 6 meals with chicken nuggets, 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.

Map to Learning Standards

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

**Regents Examination in Integrated Algebra
January 2009**

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

The *Chart for Determining the Final Examination Score for the January 2009 Regents Examination in Integrated Algebra* will be posted on the Department’s web site <http://www.emsc.nysed.gov/osa/> on Thursday, January 29, 2009. Conversion charts provided for previous administrations of the Integrated Algebra 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.

Regents Examination in Integrated Algebra January 2009

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

All student answer papers that receive a scale score of 60 through 64 **must** be scored a second time to ensure the accuracy of the score. 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 scale 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 Regents Examination in Integrated Algebra.