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

Print Your Name:

Print Your School's Name:

Print your name and the name of your school in the boxes above. Then turn to the last page of this booklet, which is the answer sheet for Part I. Fold the last page along the perforations and, slowly and carefully, tear off the answer sheet. Then fill in the heading of your answer sheet.

Scrap paper is not permitted for any part of this examination, but you may use the blank spaces in this booklet as scrap paper. A perforated sheet of scrap graph paper is provided at the end of this booklet for any question for which graphing may be helpful but is not required. You may remove this sheet from this booklet. Any work done on this sheet of scrap graph paper will *not* be scored. All work should be written in pen, except graphs and drawings, which should be done in pencil.

The formulas that you may need to answer some questions in this examination are found at the end of the examination. This sheet is perforated so you may remove it from this booklet.

This examination has four parts, with a total of 39 questions. You must answer all questions in this examination. Write your answers to the Part I multiple-choice questions on the separate answer sheet. Write your answers to the questions in Parts II, III, and IV directly in this booklet. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc.

When you have completed the examination, you must sign the statement printed at the end of the answer sheet, indicating that you had no unlawful knowledge of the questions or answers prior to the examination and that you have neither given nor received assistance in answering any of the questions during the examination. Your answer sheet cannot be accepted if you fail to sign this declaration.

Notice…

A graphing calculator and a straightedge (ruler) must be available for you to use while taking this examination.

The use of any communications device is strictly prohibited when taking this examination. If you use any communications device, no matter how briefly, your examination will be invalidated and no score will be calculated for you.

DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN.

Part I

Answer all questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. For each question, write on the separate answer sheet the numeral preceding the word or expression that best completes the statement or answers the question. [60]

Use this space for computations.

1 On a certain day in Toronto, Canada, the temperature was 15° Celsius (C). Using the formula $F = \frac{9}{5}C + 32$, Peter converts this temperature to degrees Fahrenheit (F). Which temperature represents 15°C in degrees Fahrenheit?

(1) –9
(2) 35
(3) 59
(4) 85

2 What is the speed, in meters per second, of a paper airplane that flies 24 meters in 6 seconds?

(1) 144
(2) 30
(3) 18
(4) 4

3 The faces of a cube are numbered from 1 to 6. If the cube is rolled once, which outcome is *least* likely to occur?

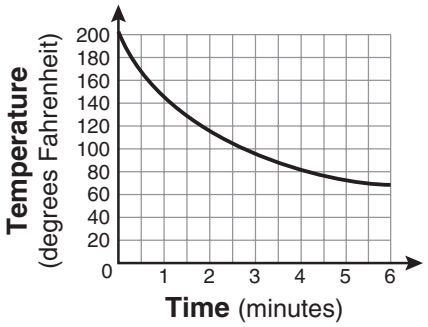
(1) rolling an odd number
(2) rolling an even number
(3) rolling a number less than 6
(4) rolling a number greater than 4

Use this space for computations.

4 Tamara has a cell phone plan that charges \$0.07 per minute plus a monthly fee of \$19.00. She budgets \$29.50 per month for total cell phone expenses without taxes. What is the maximum number of minutes Tamara could use her phone each month in order to stay within her budget?

(1) 150
(2) 271
(3) 421
(4) 692

5 Antwaan leaves a cup of hot chocolate on the counter in his kitchen. Which graph is the best representation of the change in temperature of his hot chocolate over time?



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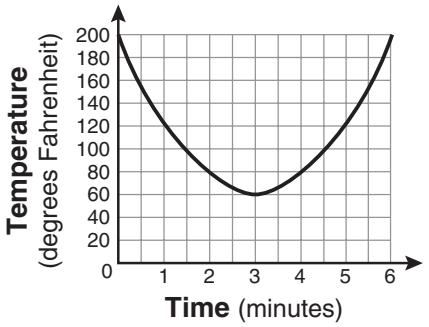

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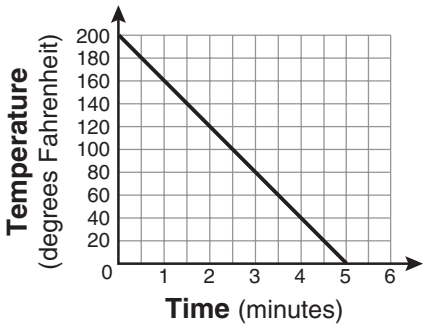

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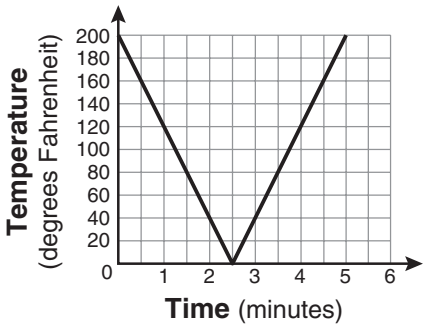


(4)

6 What is the solution of $\frac{k+4}{2} = \frac{k+9}{3}$?

(1) 1
(2) 5
(3) 6
(4) 14

Use this space for computations.

7 Alex earned scores of 60, 74, 82, 87, 87, and 94 on his first six algebra tests. What is the relationship between the measures of central tendency of these scores?

(1) median < mode < mean
(2) mean < mode < median
(3) mode < median < mean
(4) mean < median < mode

8 The New York Volleyball Association invited 64 teams to compete in a tournament. After each round, half of the teams were eliminated. Which equation represents the number of teams, t, that remained in the tournament after r rounds?

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

9 The expression $9x^2 - 100$ is equivalent to

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

10 What is an equation of the line that passes through the points (3,–3) and (–3,–3)?

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

Use this space for computations.

11 If the formula for the perimeter of a rectangle is $P = 2l + 2w$, then w can be expressed as

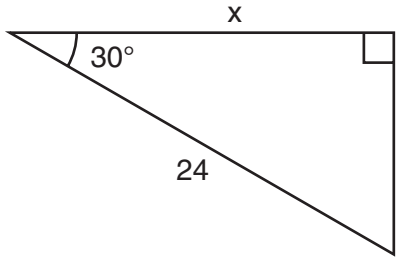
(1) $w = \frac{2l - P}{2}$

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

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

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

12 In the right triangle shown in the diagram below, what is the value of x to the *nearest whole number*?



(1) 12

(2) 14

(3) 21

(4) 28

13 What is the slope of the line that passes through the points (2,5) and (7,3)?

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

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

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

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

Use this space for computations.

14 What are the roots of the equation $x^2 - 10x + 21 = 0$?

(1) 1 and 21

(2) –5 and –5

(3) 3 and 7

(4) –3 and –7

15 Rhonda has \$1.35 in nickels and dimes in her pocket. If she has six more dimes than nickels, which equation can be used to determine x, the number of nickels she has?

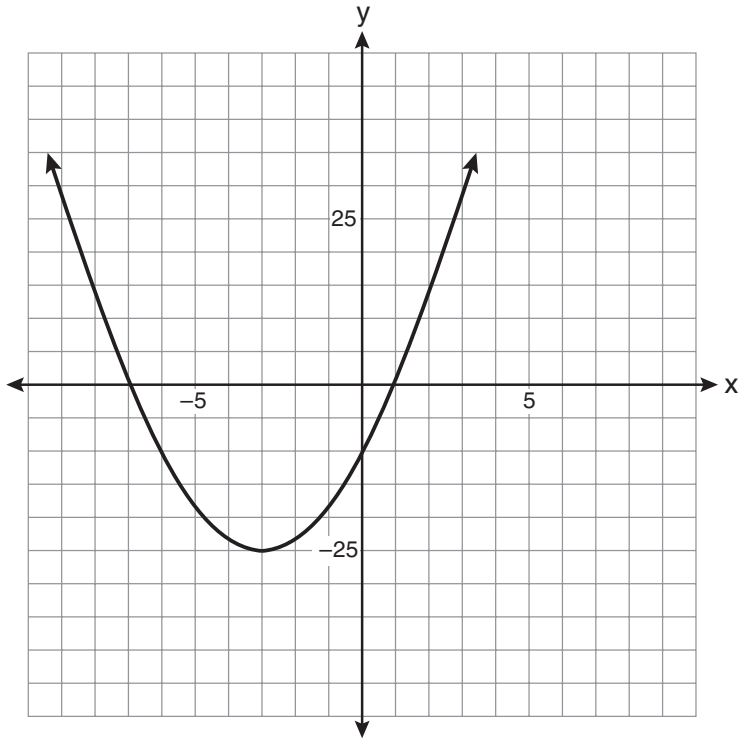
(1) $0.05(x + 6) + 0.10x = 1.35$

(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 Which equation represents the axis of symmetry of the graph of the parabola below?



(1) $y = -3$

(2) $x = -3$

(3) $y = -25$

(4) $x = -25$

Use this space for computations.

17 The set $\{1,2,3,4\}$ is equivalent to

(1) $\{x \mid 1 < x < 4, \text{where } x \text{ is a whole number}\}$

(2) $\{x \mid 0 < x < 4, \text{where } x \text{ is a whole number}\}$

(3) $\{x \mid 0 < x \leq 4, \text{where } x \text{ is a whole number}\}$

(4) $\{x \mid 1 < x \leq 4, \text{where } x \text{ is a whole number}\}$

18 What is the value of x in the equation $\frac{2}{x} - 3 = \frac{26}{x}$?

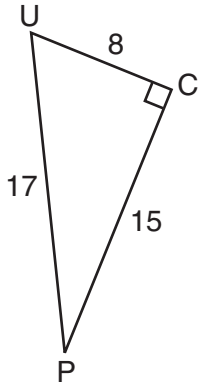
(1) -8

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

(3) $\frac{1}{8}$

(4) 8

19 The diagram below shows right triangle *UPC*.



Which ratio represents the sine of $\angle U$?

(1) $\frac{15}{8}$

(2) $\frac{15}{17}$

(3) $\frac{8}{15}$

(4) $\frac{8}{17}$

Use this space for computations.

20 What is $\sqrt{72}$ expressed in simplest radical form?

(1) $2\sqrt{18}$
(2) $3\sqrt{8}$
(3) $6\sqrt{2}$
(4) $8\sqrt{3}$

21 What is $\frac{6}{5x} - \frac{2}{3x}$ in simplest form?

(1) $\frac{8}{15x^2}$
(2) $\frac{8}{15x}$
(3) $\frac{4}{15x}$
(4) $\frac{4}{2x}$

22 Which ordered pair is a solution of the system of equations $y = x^2 - x - 20$ and $y = 3x - 15$?

(1) (–5,–30)
(2) (–1,–18)
(3) (0,5)
(4) (5,–1)

23 A survey is being conducted to determine which types of television programs people watch. Which survey and location combination would likely contain the most bias?

(1) surveying 10 people who work in a sporting goods store
(2) surveying the first 25 people who enter a grocery store
(3) randomly surveying 50 people during the day in a mall
(4) randomly surveying 75 people during the day in a clothing store

Use this space for computations.

24 The length of a rectangular room is 7 less than three times the width, w, of the room. Which expression represents the area of the room?

(1) $3w - 4$

(2) $3w - 7$

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

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

25 The function $y = \frac{x}{x^2 - 9}$ is undefined when the value of x is

(1) 0 or 3

(2) 3 or –3

(3) 3, only

(4) –3, only

26 Which equation represents a line that is parallel to the line $y = 3 - 2x$?

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

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

(3) $y = 3 - 4x$

(4) $y = 4x - 2$

Use this space for computations.

27 What is the product of 8.4×10^8 and 4.2×10^3 written in scientific notation?

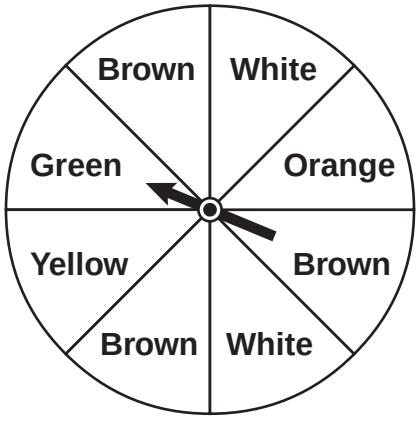
(1) 2.0×10^5

(2) 12.6×10^{11}

(3) 35.28×10^{11}

(4) 3.528×10^{12}

28 Keisha is playing a game using a wheel divided into eight equal sectors, as shown in the diagram below. Each time the spinner lands on orange, she will win a prize.



If Keisha spins this wheel twice, what is the probability she will win a prize on *both* spins?

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

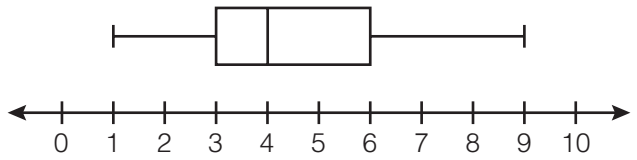
(2) $\frac{1}{56}$

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

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

Use this space for computations.

29 A movie theater recorded the number of tickets sold daily for a popular movie during the month of June. The box-and-whisker plot shown below represents the data for the number of tickets sold, in hundreds.



Which conclusion can be made using this plot?

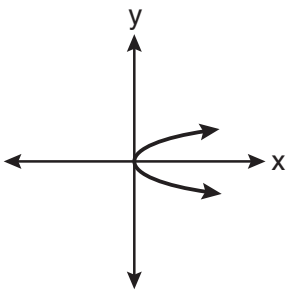
(1) The second quartile is 600.

(2) The mean of the attendance is 400.

(3) The range of the attendance is 300 to 600.

(4) Twenty-five percent of the attendance is between 300 and 400.

30 Which graph represents a function?



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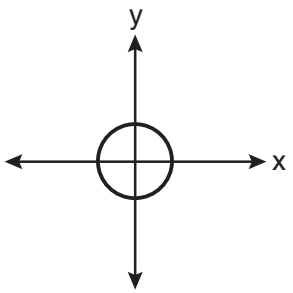

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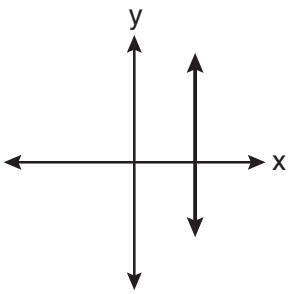

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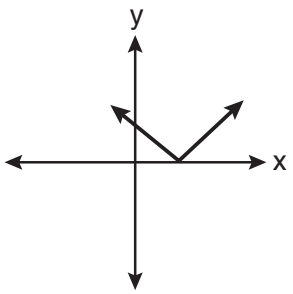
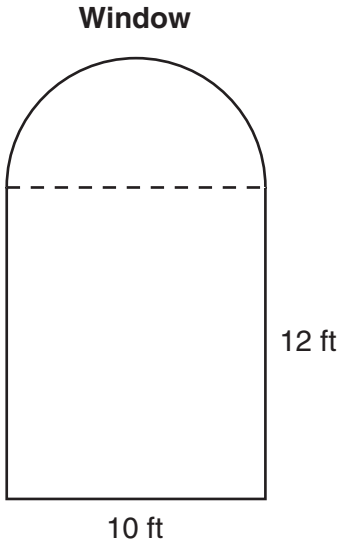


(4)

Part II

Answer all questions in this part. Each correct answer will receive 2 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [6]

31 A window is made up of a single piece of glass in the shape of a semicircle and a rectangle, as shown in the diagram below. Tess is decorating for a party and wants to put a string of lights all the way around the outside edge of the window.



To the *nearest foot*, what is the length of the string of lights that Tess will need to decorate the window?

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

33 The table below represents the number of hours a student worked and the amount of money the student earned.

Number of Hours (h)	**Dollars Earned** (d)
8	$50.00
15	$93.75
19	$118.75
30	$187.50

Write an equation that represents the number of dollars, d, earned in terms of the number of hours, h, worked.

Using this equation, determine the number of dollars the student would earn for working 40 hours.

Part III

Answer all questions in this part. Each correct answer will receive 3 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [9]

34 Sarah measures her rectangular bedroom window for a new shade. Her measurements are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches.

Using the measurements that Sarah took, determine the number of square inches in the area of the window.

Determine the number of square inches in the actual area of the window.

Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth.*

35 Perform the indicated operation and simplify: $\frac{3x+6}{4x+12} \div \frac{x^2-4}{x+3}$

36 A soup can is in the shape of a cylinder. The can has a volume of 342 cm^3 and a diameter of 6 cm. Express the height of the can in terms of π.

Determine the maximum number of soup cans that can be stacked on their base between two shelves if the distance between the shelves is exactly 36 cm. Explain your answer.

Part IV

Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [12]

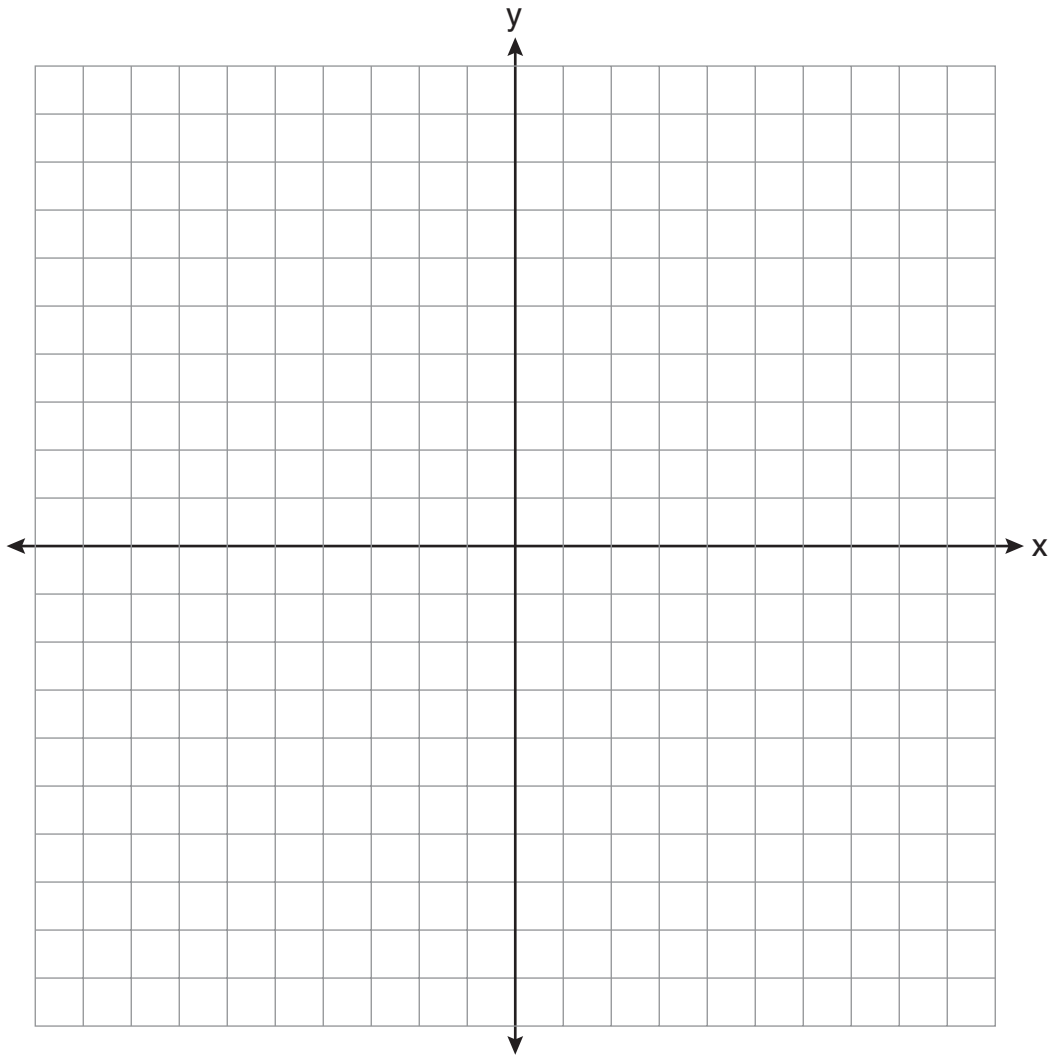
37 Solve the following system of equations algebraically:

$$3x + 2y = 4$$
$$4x + 3y = 7$$

[Only an algebraic solution can receive full credit.]

38 On the set of axes below, graph the following system of inequalities and state the coordinates of a point in the solution set.

$$2x - y \geq 6$$
$$x > 2$$



39 A restaurant sells kids' meals consisting of one main course, one side dish, and one drink, as shown in the table below.

Kids' Meal Choices

Main Course	Side Dish	Drink
hamburger	French fries	milk
chicken nuggets	applesauce	juice
turkey sandwich		soda

Draw a tree diagram or list the sample space showing all possible kids' meals. How many different kids' meals can a person order?

José does not drink juice. Determine the number of different kids' meals that do *not* include juice.

José's sister will eat *only* chicken nuggets for her main course. Determine the number of different kids' meals that include chicken nuggets.

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Reference Sheet

Trigonometric Ratios	$\sin A = \frac{opposite}{hypotenuse}$ $\cos A = \frac{adjacent}{hypotenuse}$ $\tan A = \frac{opposite}{adjacent}$
Area	trapezoid $A = \frac{1}{2}h(b_1 + b_2)$
Volume	cylinder $V = \pi r^2 h$
Surface Area	rectangular prism $SA = 2lw + 2hw + 2lh$ cylinder $SA = 2\pi r^2 + 2\pi rh$
Coordinate Geometry	$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

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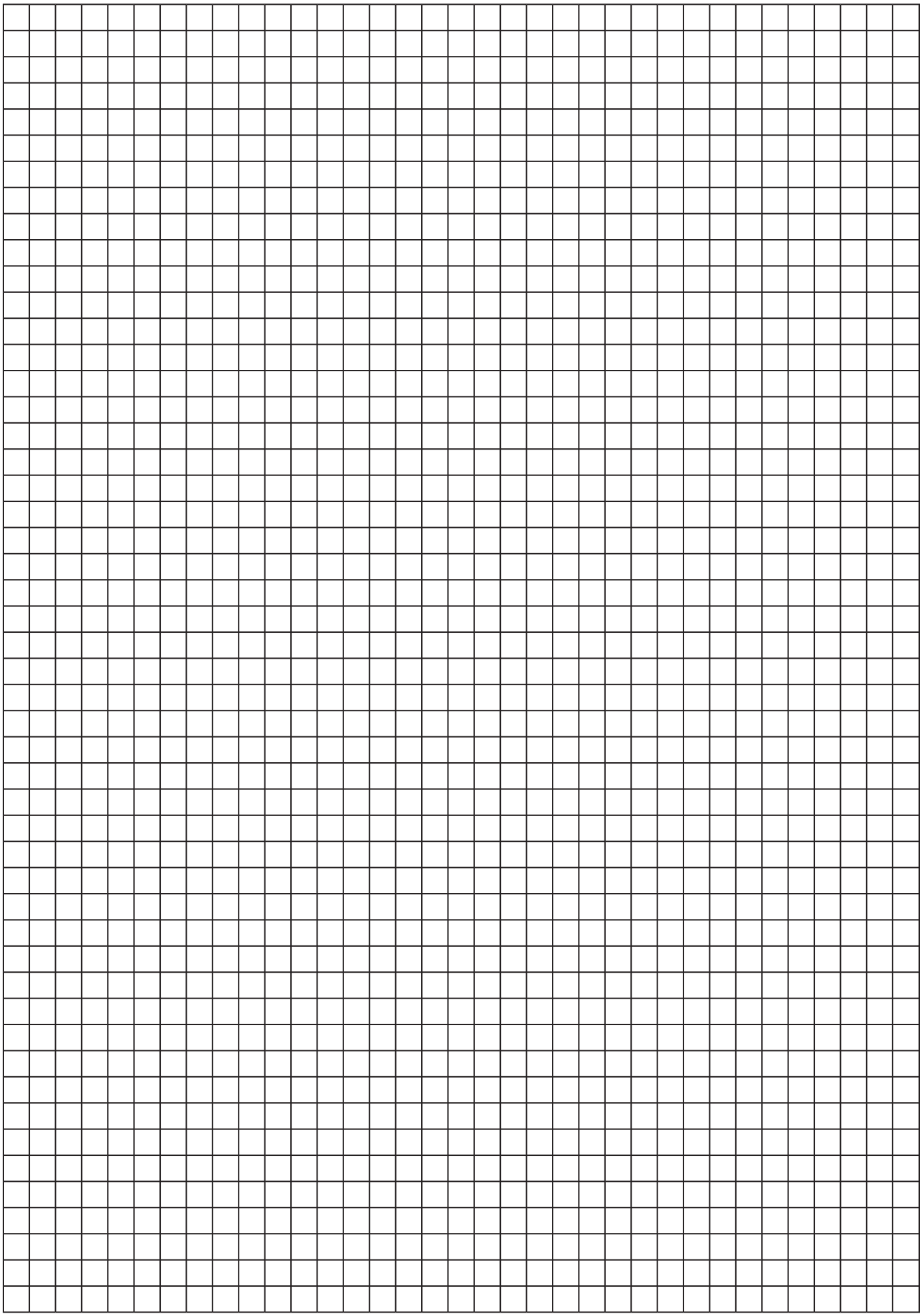

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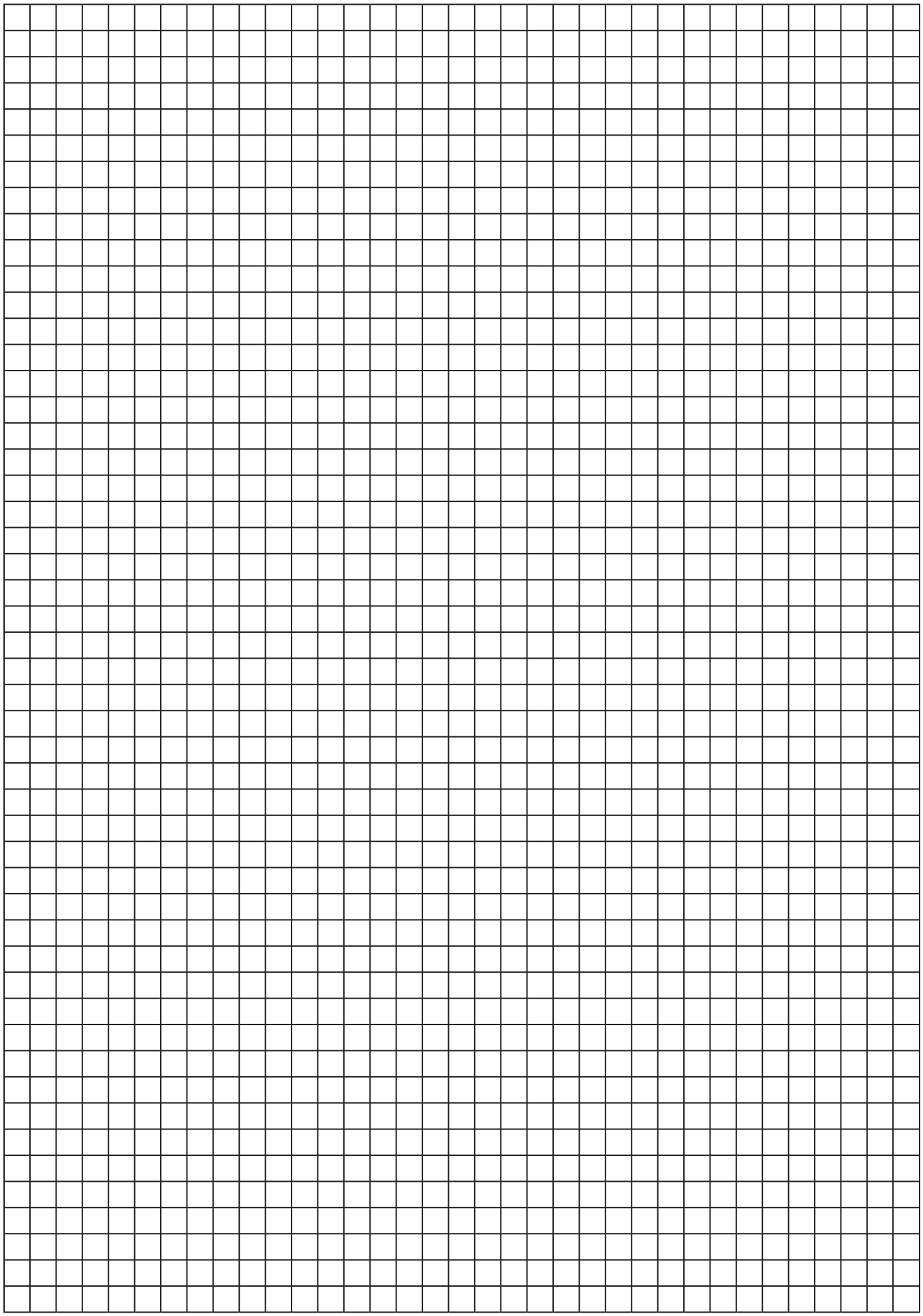

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The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

INTEGRATED ALGEBRA

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ANSWER SHEET

Student . . . . . Sex: ❑ Male ❑ Female Grade . . . . .

Teacher . . . . . School . . . . . .

Your answers to Part I should be recorded on this answer sheet.

Part I

Answer all 30 questions in this part.

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	

Your answers for Parts II, III, and IV should be written in the test booklet.

The declaration below should be signed when you have completed the examination.

I do hereby affirm, at the close of this examination, that I had no unlawful knowledge of the questions or answers prior to the examination and that I have neither given nor received assistance in answering any of the questions during the examination.

Tear Here

Signature

INTEGRATED ALGEBRA			
Question	**Maximum Credit**	**Credits Earned**	**Rater's/Scorer's Initials**
Part I 1–30	**60**		
Part II 31	**2**		
32	**2**		
33	**2**		
Part III 34	**3**		
35	**3**		
36	**3**		
Part IV 37	**4**		
38	**4**		
39	**4**		
Maximum Total	**87**		

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

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

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FOR TEACHERS ONLY

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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.

(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.

(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.

University of the State of New York
State Education Department

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.