FOR TEACHERS ONLY

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

INTEGRATED ALGEBRA

Tuesday, June 17, 2008 — 9:15 a.m. to 12:15 p.m., only

SCORING KEY

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 a No. 2 pencil in rating the Regents Examination in Integrated Algebra. Do *not* attempt to correct the student's work by making insertions or changes of any kind. Scoring overlays have been included in the package of scoring materials and must be used to score Part I, the multiple-choice section. When scoring the examination:

- **cut out** the rectangular space on the bottom of the scoring overlay to record the total Part I score
- **do not** punch holes in the scoring overlay
- **do not** make any marks on the answer sheet, other than in the spaces provided for recording scores
- **do not** machine scan the answer sheets. Marking up or scanning these answer sheets will interfere with the score collection.

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 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 answer sheet. Make a careful record to be retained in the school of the total raw score earned by each student. The State Education Department will provide a recordkeeping form for this purpose as part of the detailed directions for administering and scoring the June 2008 Regents Examination in Integrated Algebra.

The conversion chart for the Regents Examination in Integrated Algebra will be posted on the Department's web site http://www.emsc.nysed.gov/osa/ no later than Rating Day, Thursday, June 26, 2008.

Part I

Allow a total of 60 credits, 2 credits for each of the following:

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

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; i.e., 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]** Ann's, and appropriate work is shown to justify the answer.

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

or

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

or

   [1] Appropriate work is shown calculating gas mileage of both vehicles, but no further correct work is shown.

   [0] Ann's, but no work is shown.

or

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

(32) **[2]** $36 - 9\pi$ or $36 - 3^2\pi$, 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] Appropriate work is shown, but the answer is not expressed in terms of π.

or

   [1] $36 - 9\pi$, 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.

[4]

(33)   **[2]** $0 \leq t \leq 40$ or an equivalent answer.

[1] Appropriate work is shown, but one conceptual error is made, such as $0 < t < 40$ or $-23 \leq t \leq 50$.

[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]** $10 + 2d \geq 75$ or an equivalent inequality and 33, 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.

or

[1] An incorrect inequality of equal difficulty is solved appropriately.

or

[1] $10 + 2d \geq 75$, but no further correct work is shown.

or

[1] 33, 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]** $\frac{3}{18}$ and $16\frac{2}{3}$ % or $16.\overline{6}$ % or equivalent answers, and $13.50, and appropriate work is shown.

[2] Appropriate work is shown, but one rounding error is made, such as 16.6%, 16.7%, or 17%.

or

[2] An incorrect fractional rate of discount is found, but an appropriate percent is stated, and $13.50 is found.

or

[2] Appropriate work is shown, but only two correct answers are found.

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

or

[1] Appropriate work is shown, but only one correct answer is found.

or

[1] $\frac{3}{18}$, $16\frac{2}{3}$ %, and $13.50, but no work is shown.

[0] $\frac{3}{18}$, $16\frac{2}{3}$ %, or $13.50, 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.

[OVER]

(36) **[3]** The correct graph is drawn, and −1 and 3 are found.

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

or

   [2] The graph of the parabola is drawn correctly, but no further correct work is shown.

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

or

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

or

   [1] −1 and 3 are stated, but no work is shown.

   [0] −1 or 3 is stated, 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]** An appropriate equation is written, width = 3, length = 18, and appropriate work is shown.

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

or

[3] Appropriate work is shown, but the length and width are not labeled or are labeled incorrectly.

or

[3] Appropriate work is shown to find either the length or the width of the walkway, but no further correct work is shown.

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

or

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

or

[2] An appropriate quadratic equation in standard form (set equal to zero) is written, but no further correct work is shown.

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

or

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

or

[1] Width = 3 and length = 18, but no work is shown.

[0] Width = 3 or length = 18, but no work is shown.

or

[0] 3 and 18, 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.

[OVER]

(38) **[4]** 618.45, 613.44, and 0.008, and appropriate work is shown, and an appropriate justification is given.

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

or

[3] 618.45, 613.44, and 0.008, and appropriate work is shown, but no justification is given.

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

or

[2] Appropriate work is shown, but one conceptual error is made, such as dividing by 618.45.

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

or

[1] 618.45 and 613.44, and appropriate work is shown, but no further correct work is shown.

or

[1] 618.45, 613.44, and 0.008, but no work is shown.

[0] 618.45 or 613.44, and appropriate work is shown, but no further correct 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.

(39)　**[4]** Mean = 315,000, median = 180,000, and the median is stated to be the best measure of central tendency, an appropriate justification is given, and appropriate work is shown.

　　[3] Appropriate work is shown, but one computational error is made, but an appropriate measure of central tendency is stated, and an appropriate justification is given.

or

　　[3] Mean = 315,000, median = 180,000, and the median is stated to be the best measure of central tendency, but no further correct work is shown.

　　[2] Appropriate work is shown, but two computational errors are made, but an appropriate measure of central tendency is stated, and an appropriate justification is given.

or

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

or

　　[2] Appropriate work is shown to find mean = 315,000 and median = 180,000, but no further correct work is shown.

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

or

　　[1] Appropriate work is shown to find mean = 315,000 or median = 180,000, but no further correct work is shown.

or

　　[1] Mean = 315,000 and median = 180,000, but no further correct work is shown, and no justification is given.

　　[0] Mean = 315,000 or median = 180,000, but no further correct work is shown, and no justification is given.

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

Regents Examination in Integrated Algebra

June 2008

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

The *Chart for Determining the Final Examination Score for the June 2008 Regents Examination in Integrated Algebra* will be posted on the Department's web site **http://www.emsc.nysed.gov/osa/** on Thursday, June 26, 2008.

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.