

# INTEGRATED ALGEBRA

The University of the State of New York  
REGENTS HIGH SCHOOL EXAMINATION

# INTEGRATED ALGEBRA

Thursday, August 14, 2014 — 8:30 to 11:30 a.m., only

Student Name: \_\_\_\_\_

School Name: \_\_\_\_\_

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

Print your name and the name of your school on the lines above.

A separate answer sheet for Part I has been provided to you. Follow the instructions from the proctor for completing the student information on your answer sheet.

This examination has four parts, with a total of 39 questions. You must answer all questions in this examination. Record 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. All work should be written in pen, except graphs and drawings, which should be done in pencil. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. 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.

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.

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.

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

## Part I

Answer all 30 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 What is the product of  $3a^2b$  and  $-2ab^3$ ?

(1)  $a^2b^3$

(3)  $-6a^2b^3$

(2)  $a^3b^4$

(4)  $-6a^3b^4$

2 The value of the expression  $|-20| - |6|$  is

(1) 26

(3) -14

(2) 14

(4) -26

3 When  $9x^2 - 100$  is factored, it is equivalent to  $(3x - b)(3x + b)$ .  
What is a value for  $b$ ?

(1) 50

(3) 3

(2) 10

(4) 100

4 Which equation represents the line that passes through the points  $(1,1)$  and  $(-2,7)$ ?

(1)  $y = -2x + 9$

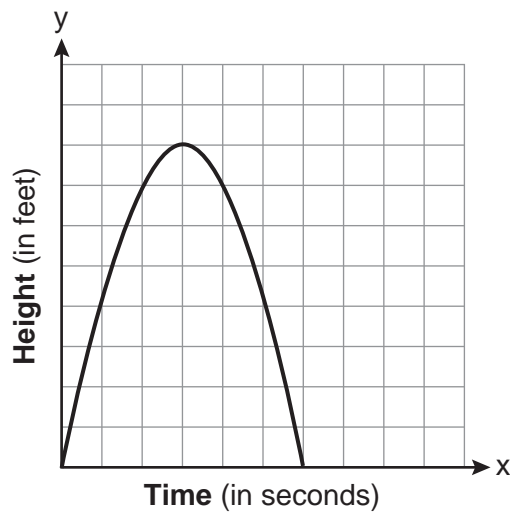
(3)  $y = -\frac{1}{2}x + 8$

(2)  $y = -2x + 3$

(4)  $y = -\frac{1}{2}x + 6$

**Use this space for computations.**

- 5 The graph below represents the parabolic path of a ball kicked by a young child. What are the vertex and the axis of symmetry for the parabola?



- (1) vertex: (3,8); axis of symmetry:  $x = 3$   
(2) vertex: (3,8); axis of symmetry:  $y = 3$   
(3) vertex: (8,3); axis of symmetry:  $x = 3$   
(4) vertex: (8,3); axis of symmetry:  $y = 3$
- 6 Which relationship can best be described as causal?
- (1) The alarm goes off and the sun rises.  
(2) The car is moving slowly and the driver is singing.  
(3) The snow is falling and the stores run out of snow shovels.  
(4) The birds are chirping and the rain is coming down.
- 7 In a class, which data can be classified as qualitative?
- (1) age of students                      (3) shoe size of students  
(2) weight of students                (4) hair color of students

8 Given the following:

$$A = \{\text{Charles, Kyle, Nakim, Jade}\}$$

$$B = \{\text{Charles, Jade, Alicia, Kyle}\}$$

$$C = \{\text{Kyle, Nakim, Jade, Dylan}\}$$

What is the intersection of sets  $A$ ,  $B$ , and  $C$ ?

- (1) {Kyle, Nakim}                      (3) {Jade, Nakim}  
(2) {Charles, Kyle}                    (4) {Jade, Kyle}

9 The sum of  $\frac{3x-4}{x+3}$  and  $\frac{2x-5}{x+3}$  is

- (1)  $\frac{5x-9}{x+3}$                                   (3)  $\frac{5x-9}{x+6}$   
(2)  $\frac{5x+1}{2x+6}$                                   (4)  $\frac{5x+1}{x+3}$

10 If Rosa's age is represented by  $R$ , which inequality represents the statement "Rosa is at most 29 years old"?

- (1)  $R < 29$                                   (3)  $R \leq 29$   
(2)  $R > 29$                                   (4)  $R \geq 29$

11 What is the slope of a line passing through points  $(-7,5)$  and  $(5,-3)$ ?

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

12 A positive correlation always exists on a scatter plot when

- (1)  $y$  remains unchanged as  $x$  increases  
(2)  $y$  changes randomly as  $x$  increases  
(3)  $y$  decreases as  $x$  increases  
(4)  $y$  increases as  $x$  increases

**Use this space for computations.**

**13** A sandwich consists of one type of meat, one type of condiment, and one type of cheese. The possible choices are listed below:

Meat: beef, chicken, turkey

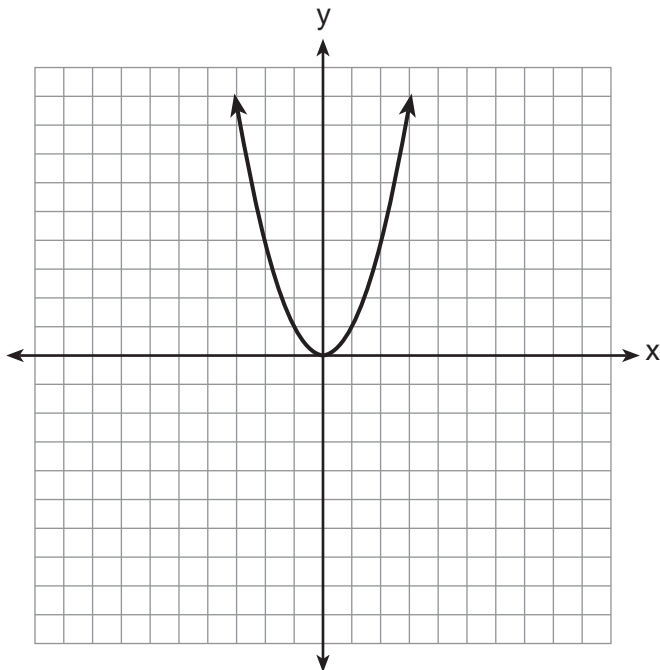
Condiment: ketchup, mustard, mayonnaise

Cheese: American, cheddar, provolone, mozzarella

In the sample space of all the possible different sandwiches consisting of one type of meat, one type of condiment, and one type of cheese, how many sandwiches do *not* include provolone cheese?

- (1) 27
- (2) 9
- (3) 3
- (4) 36

**14** The graph of the equation  $y = x^2$  is shown below.



Which statement best describes the change in this graph when the coefficient of  $x^2$  is multiplied by 4?

- (1) The parabola becomes wider.
- (2) The parabola becomes narrower.
- (3) The parabola will shift up four units.
- (4) The parabola will shift right four units.



**Use this space for  
computations.**

**19** A teacher asked the class to solve the equation  $3(x + 2) = 21$ . Robert wrote  $3x + 6 = 21$  as his first step. Which property did he use?

- (1) associative property      (3) distributive property  
(2) commutative property      (4) zero property of addition

**20** If the roots of a quadratic equation are  $-4$  and  $2$ , the equation is equivalent to

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

**21** Kelsey scored the following points in her first six basketball games: 22, 14, 19, 22, 8, and 17. What is the relationship between the measures of central tendency of these data?

- (1) mode  $>$  median  $>$  mean      (3) mean  $>$  median  $>$  mode  
(2) median  $>$  mode  $>$  mean      (4) mode  $>$  mean  $>$  median

**22** Sheba opened a retirement account with \$36,500. Her account grew at a rate of 7% per year compounded annually. She made no deposits or withdrawals on the account. At the end of 20 years, what was the account worth, to the *nearest dollar*?

- (1) \$87,600      (3) \$141,243  
(2) \$130,786      (4) \$1,483,444,463

**23** Which equation represents a vertical line?

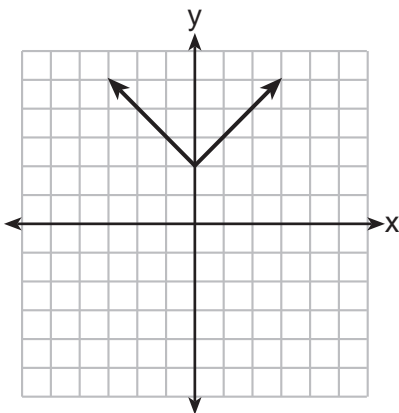
- (1)  $y = -x$       (3)  $x = y$   
(2)  $y = 12$       (4)  $x = 12$

**Use this space for computations.**

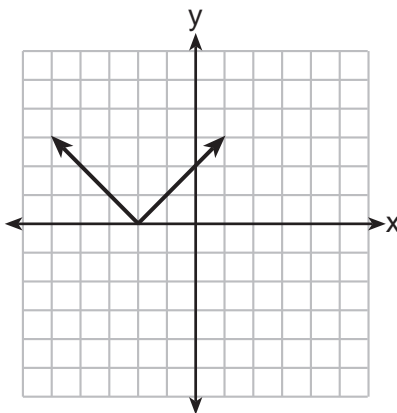
**24** Byron has 72 coins in his piggy bank. The piggy bank contains only dimes and quarters. If he has \$14.70 in his piggy bank, which equation can be used to determine  $q$ , the number of quarters he has?

- (1)  $14.70 + 0.25q = 72$
- (2)  $0.10(q - 72) + 0.25q = 14.70$
- (3)  $0.10(72 - q) + 0.25q = 14.70$
- (4)  $0.10q + 0.25(72 - q) = 14.70$

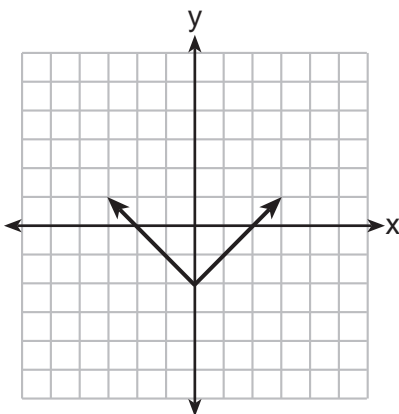
**25** Which graph represents the equation  $y = |x - 2|$ ?



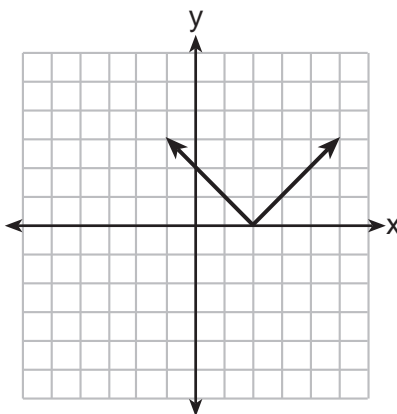
(1)



(3)



(2)



(4)



**Use this space for  
computations.**

**26** If  $ax + 3 = 7 - bx$ , what is  $x$  expressed in terms of  $a$  and  $b$ ?

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

(3)  $\frac{4}{a+b}$

(2)  $-\frac{4}{ab}$

(4)  $-\frac{4}{a+b}$

**27** Which equation represents a line that is parallel to the line whose equation is  $y = -3x$ ?

(1)  $\frac{1}{3}x + y = 4$

(3)  $6x + 2y = 4$

(2)  $-\frac{1}{3}x + y = 4$

(4)  $-6x + 2y = 4$

**28** What is the result when  $6x^2 - 13x + 12$  is subtracted from  $-3x^2 + 6x + 7$ ?

(1)  $3x^2 - 7x + 19$

(3)  $9x^2 - 7x + 19$

(2)  $9x^2 - 19x + 5$

(4)  $-9x^2 + 19x - 5$

**29** What is the solution set of the equation  $\frac{x}{3} = \frac{8}{x+2}$ ?

(1)  $\{-6, -4\}$

(3)  $\{6, -4\}$

(2)  $\{-6, 4\}$

(4)  $\{6, 4\}$

**30** Which set of integers is included in  $(-1, 3]$ ?

(1)  $\{0, 1, 2, 3\}$

(3)  $\{-1, 0, 1, 2, 3, 4\}$

(2)  $\{-1, 0, 1, 2\}$

(4)  $\{-2, -1, 0, 1, 2, 3\}$

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## Part II

Answer all 3 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. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [6]

31 Using his data on annual deer population in a forest, Noj found the following information:

25th percentile: 12

50th percentile: 15

75th percentile: 22

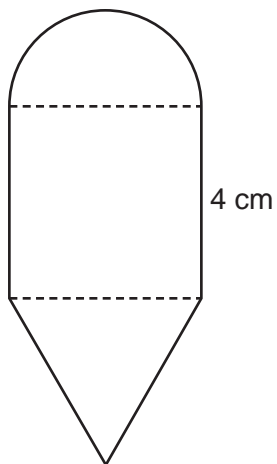
Minimum population: 8

Maximum population: 27

Using the number line below, construct a box-and-whisker plot to display these data.



**32** The diagram below consists of a square with a side of 4 cm, a semicircle on the top, and an equilateral triangle on the bottom. Find the perimeter of the figure to the *nearest tenth of a centimeter*.

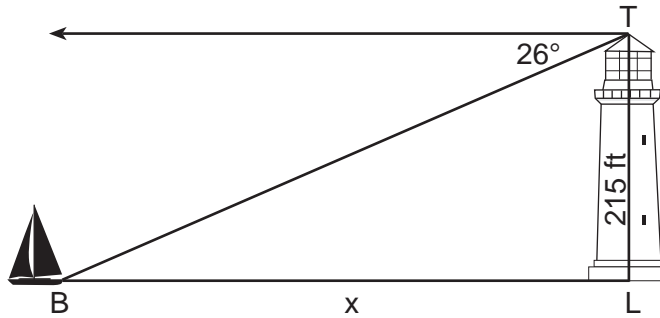


**33** A thermos in the shape of a cylinder is filled to 1 inch from the top of the cylinder with coffee. The height of the cylinder is 12 inches and its radius is 2.5 inches. State, to the *nearest hundredth of a cubic inch*, the volume of coffee in the thermos.

### Part III

Answer all 3 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. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [9]

- 34 The top of a lighthouse,  $T$ , is 215 feet above sea level,  $L$ , as shown in the diagram below. The angle of depression from the top of the lighthouse to a boat,  $B$ , at sea is  $26^\circ$ . Determine, to the nearest foot, the horizontal distance,  $x$ , from the boat to the base of the lighthouse.



**35** There are six apples, five oranges, and one pear in John's basket. His friend takes three pieces of fruit at random without replacement. Determine the probability that *all three* fruits taken are apples.

**36** Express  $y\sqrt{3} - (\sqrt{32} + y\sqrt{27})$  in simplest radical form.

Part IV

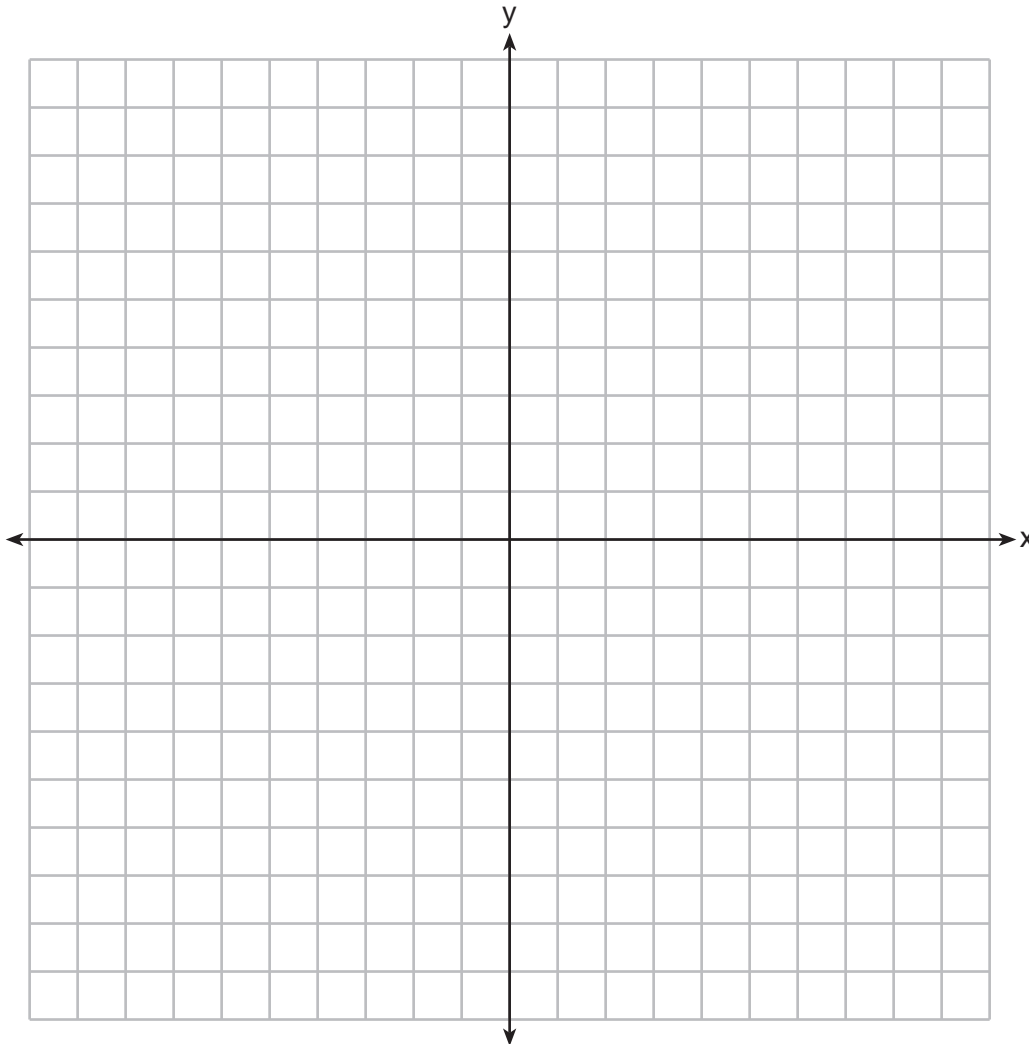
Answer all 3 questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [12]

37 On the set of axes below, solve the following system of inequalities graphically.

$$y + 3 < 2x$$

$$-2y \leq 6x - 10$$

State the coordinates of a point in the solution set.





**38** The actual side of a square tile is 4 inches. The manufacturers allow a relative error of 0.025 in the area of a tile. Two machines are used to cut the tiles. Machine *A* produces a square tile with a length of 3.97 inches. Machine *B* produces a square tile with a length of 4.12 inches. Determine which machine produces a tile whose area falls within the allowed relative error.

**39** Solve the following system of equations algebraically:

$$y = x^2 - 6x + 9$$

$$y = -9x + 19$$

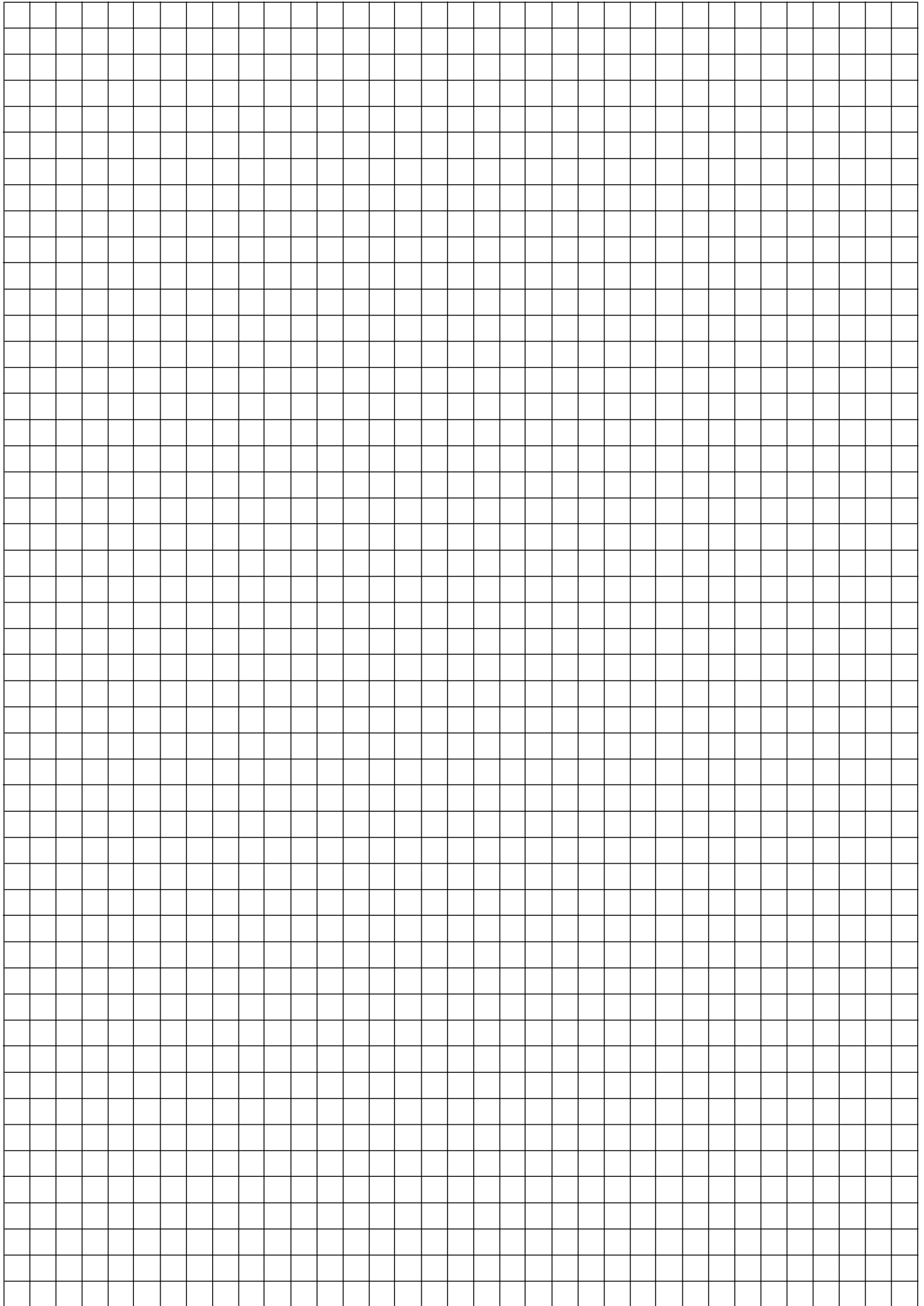




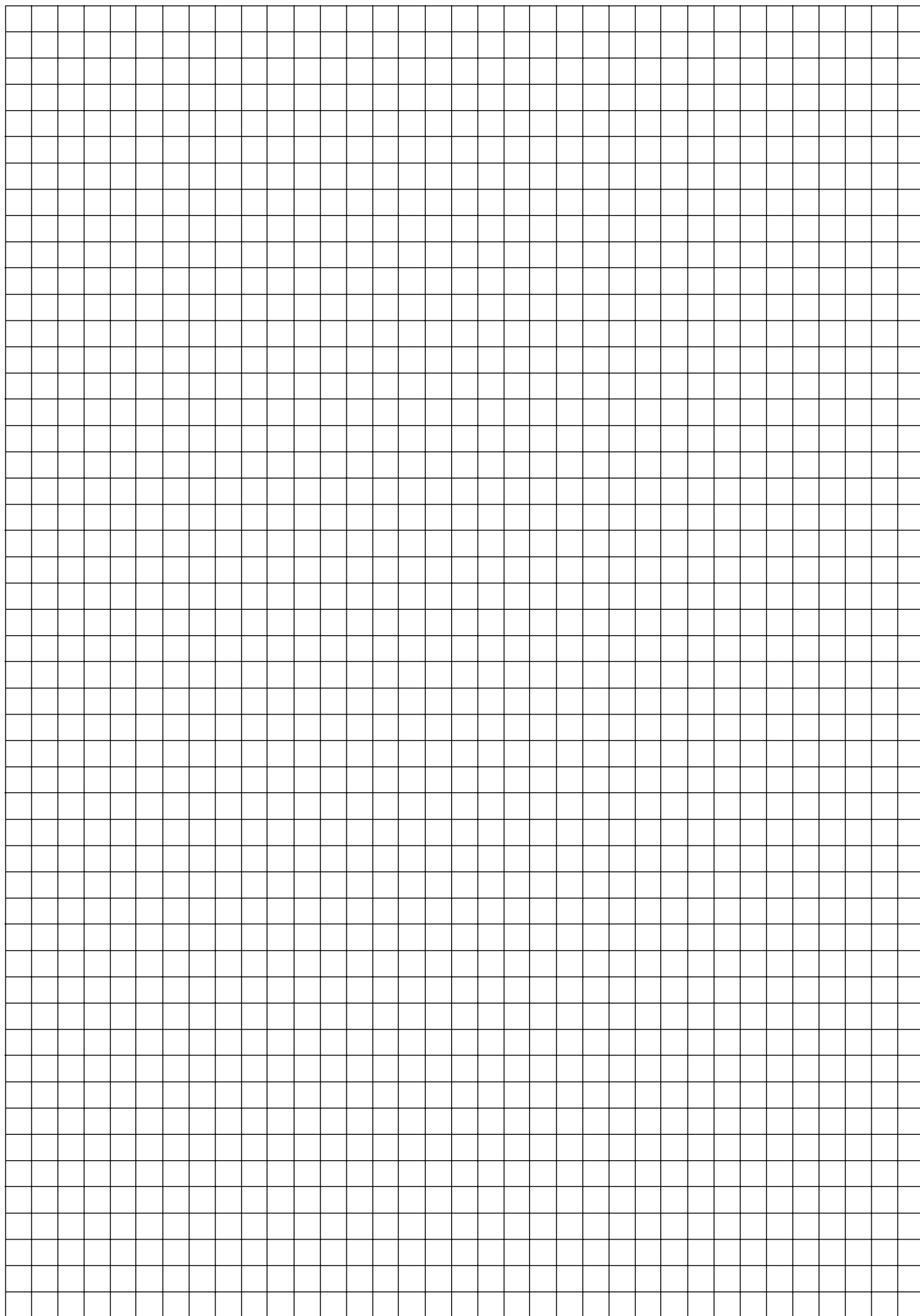
Scrap Graph Paper — This sheet will *not* be scored.

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Scrap Graph Paper — This sheet will *not* be scored.



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## Reference Sheet

Trigonometric Ratios

$$\sin A = \frac{\textit{opposite}}{\textit{hypotenuse}}$$

$$\cos A = \frac{\textit{adjacent}}{\textit{hypotenuse}}$$

$$\tan A = \frac{\textit{opposite}}{\textit{adjacent}}$$

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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# FOR TEACHERS ONLY

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REGENTS HIGH SCHOOL EXAMINATION

## INTEGRATED ALGEBRA

Thursday, August 14, 2014 — 8:30 to 11:30 a.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 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. 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. Teachers may not score their own students' answer papers. 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/assessment/> on Thursday, August 14, 2014. 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.

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 marks on the answer sheet except to record the scores in the designated score boxes. Marks elsewhere on the answer sheet will interfere with the accuracy of the scanning.

### Part I

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

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

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 at: <http://www.p12.nysed.gov/assessment/> and select the link "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 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 other wise specified, mathematically correct alternative solutions should be awarded appropriate credit.

- (31) [2] A correct box-and-whisker plot with a correct scale is drawn and labeled.
- [1] A box-and-whisker plot is drawn, but one graphing or labeling error is made.
- or*
- [1] One conceptual error is made, but an appropriate box-and-whisker plot with an appropriate scale is drawn.
- [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] 22.3, and correct work is shown.
- [1] Appropriate work is shown, but one computational or rounding error is made. An appropriate value is found.
- or*
- [1] Appropriate work is shown, but one conceptual error is made.
- or*
- [1] 22.3, 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] 215.98, and correct work is shown.

[1] Appropriate work is shown, but one computational or rounding error is made. An appropriate volume is given.

*or*

[1] Appropriate work is shown, but one conceptual error is made, such as finding the volume of the entire thermos. An appropriate volume is given.

*or*

[1] 215.98, but no work is shown.

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

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### 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] 441, and correct work is shown.

[2] Appropriate work is shown, but one computational or rounding error is made. An appropriate distance is found.

[1] Appropriate work is shown, but two or more computational or rounding errors are made. An appropriate distance is found.

*or*

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

*or*

[1]  $\tan 64 = \frac{x}{215}$  or  $\tan 26 = \frac{215}{x}$  is written, but no further correct work is shown.

*or*

[1] 441, 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]  $\frac{120}{1320}$  or an equivalent answer, and correct work is shown.

[2] Only  $\frac{6}{12} \cdot \frac{5}{11} \cdot \frac{4}{10}$  or  $\frac{{}_6P_3}{{}_{12}P_3}$  is written, but no further correct work is shown.

**or**

[2] Appropriate work is shown, but one computational error is made. An appropriate probability is found.

[1] Appropriate work is shown, but two or more computational errors are made. An appropriate probability is found.

**or**

[1] Appropriate work is shown, but one conceptual error is made, such as adding the probabilities. An appropriate probability is found.

**or**

[1]  $\frac{6}{12}$ ,  $\frac{5}{11}$  and  $\frac{4}{10}$  or  ${}_6P_3$  and  ${}_{12}P_3$  are written.

**or**

[1]  $\frac{120}{1320}$ , 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]  $-2y\sqrt{3} - 4\sqrt{2}$ , and correct work is shown.
- [2] Appropriate work is shown, but one computational or simplification error is made. An appropriate answer in simplest radical form is written.
- [1] Appropriate work is shown, but two or more computational or simplification errors are made. An appropriate answer in simplest radical form is written.
- or**
- [1] Appropriate work is shown, but one conceptual error is made. An appropriate answer in simplest form is written.
- or**
- [1]  $y\sqrt{3} - (4\sqrt{2} + 3y\sqrt{3})$  is written, but no further correct work is shown.
- or**
- [1]  $-2y\sqrt{3} - 4\sqrt{2}$  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] Both inequalities are graphed and shaded correctly, at least one is labeled, and coordinates of a point in the solution set are stated.

[3] Appropriate work is shown, but one graphing error is made, such as drawing a dashed line instead of a solid line or shading incorrectly. Appropriate coordinates are stated.

*or*

[3] Both inequalities are graphed and shaded correctly, but the graphs are not labeled or are labeled incorrectly. Appropriate coordinates are stated.

*or*

[3] Both inequalities are graphed and shaded correctly, and at least one is labeled, but coordinates are not stated or are stated incorrectly.

[2] Appropriate work is shown, but two or more graphing or labeling errors are made. Appropriate coordinates are stated.

*or*

[2] Appropriate work is shown, but one conceptual error is made, such as graphing the lines  $y = 2x - 3$  and  $y = -3x + 5$  and stating  $(1.6, 0.2)$ , the point of intersection.

*or*

[2] Both inequalities are graphed and shaded correctly, but the graphs are not labeled or are labeled incorrectly, and coordinates are not stated or are stated incorrectly.

*or*

[2] One inequality is graphed, labeled, and shaded correctly, but no further correct work is shown.

[1] Appropriate work is shown, but one conceptual error and one graphing or labeling error are made. Appropriate coordinates are stated.

*or*

[1] Appropriate work is shown to graph lines  $y = 2x - 3$  and  $y = -3x + 5$ , but no further correct work is shown.

*or*

[1] A point in the solution set is stated, 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.

- (38) [4] Machine A and correct work is shown.
- [3] Appropriate work is shown, but one computational or rounding error is made. An appropriate machine is stated.
- [2] Appropriate work is shown, but two or more computational errors are made. An appropriate machine is stated.
- or***
- [2] Appropriate work is shown, but one conceptual error is made. An appropriate machine is stated.
- or***
- [2] Appropriate work is shown to correctly find the relative error of both machine A and machine B, but no further correct work is stated.
- [1] Appropriate work is shown, but one conceptual error and one computational or rounding error are made. An appropriate machine is stated.
- or***
- [1] Appropriate work is shown to correctly find the relative error of either machine A or machine B, but no further correct work is shown.
- [0] Machine A, 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.

- (39) [4]  $(-5,64)$  and  $(2,1)$  or equivalent, and correct algebraic work is shown.
- [3] Appropriate work is shown, but one computational error is made. Appropriate values for  $x$  and  $y$  are stated.
- or**
- [3]  $x = -5$  and  $x = 2$  and appropriate work is shown, but no further correct work is shown.
- [2] Appropriate work is shown, but two or more computational errors are made. Appropriate values for  $x$  and  $y$  are stated.
- or**
- [2] Appropriate work is shown, but one conceptual error is made. Appropriate values for  $x$  and  $y$  are stated.
- or**
- [2]  $(-5,64)$  and  $(2,1)$  are stated, but a method other than algebraic is used.
- or**
- [2]  $x^2 + 3x - 10 = 0$  is written, but the equation is not solved or is solved incorrectly.
- [1] Appropriate work is shown, but one conceptual error and one computational error are made. Appropriate values for  $x$  and  $y$  are stated.
- or**
- [1] The equation  $x^2 - 6x + 9 = -9x + 19$  is set up correctly, but no further correct work is shown.
- or**
- [1]  $(-5,64)$  and  $(2,1)$ , but no work is shown.
- [0]  $(-5,64)$  or  $(2,1)$ , 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 Core Curriculum

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

### Regents Examination in Integrated Algebra August 2014

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

***The Chart for Determining the Final Examination Score for the August 2014 Regents Examination in Integrated Algebra will be posted on the Department's web site at: <http://www.p12.nysed.gov/assessment/> on Thursday, August 14, 2014. 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 – August 2014

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

**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.