

INTEGRATED ALGEBRA

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

INTEGRATED ALGEBRA

Tuesday, August 13, 2013 — 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. Record your answers on your separate answer sheet. [60]

Use this space for
computations.

- 1 Which situation describes a negative correlation?
- (1) the amount of gas left in a car's tank and the amount of gas used from it
 - (2) the number of gallons of gas purchased and the amount paid for the gas
 - (3) the size of a car's gas tank and the number of gallons it holds
 - (4) the number of miles driven and the amount of gas used

- 2 The sum of $8n^2 - 3n + 10$ and $-3n^2 - 6n - 7$ is
- (1) $5n^2 - 9n + 3$
 - (2) $5n^2 - 3n - 17$
 - (3) $-11n^2 - 9n - 17$
 - (4) $-11n^2 - 3n + 3$

- 3 Which event is certain to happen?
- (1) Everyone walking into a room will have red hair.
 - (2) All babies born in June will be males.
 - (3) The Yankees baseball team will win the World Series.
 - (4) The Sun will rise in the east.

- 4 Noj is 5 years older than Jacob. The product of their ages is 84. How old is Noj?
- (1) 6
 - (2) 7
 - (3) 12
 - (4) 14

**Use this space for
computations.**

5 Marie currently has a collection of 58 stamps. If she buys s stamps each week for w weeks, which expression represents the total number of stamps she will have?

(1) $58sw$

(3) $58s + w$

(2) $58 + sw$

(4) $58 + s + w$

6 Given:

$$A = \{\text{all odd integers from 1 through 19, inclusive}\}$$

$$B = \{9, 11, 13, 15, 17\}$$

What is the complement of set B within set A ?

(1) $\{3, 5, 7\}$

(3) $\{1, 3, 5, 7\}$

(2) $\{3, 5, 7, 19\}$

(4) $\{1, 3, 5, 7, 19\}$

7 Which equation represents a line that is parallel to the line whose equation is $y = -3x - 7$?

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

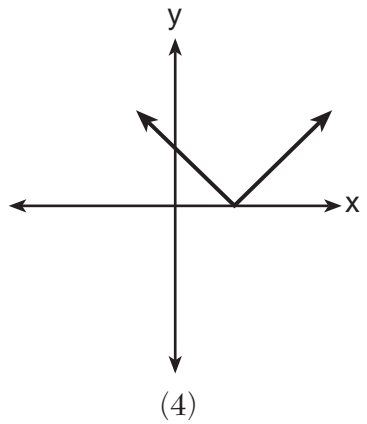
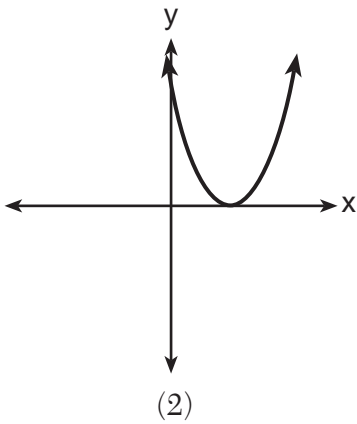
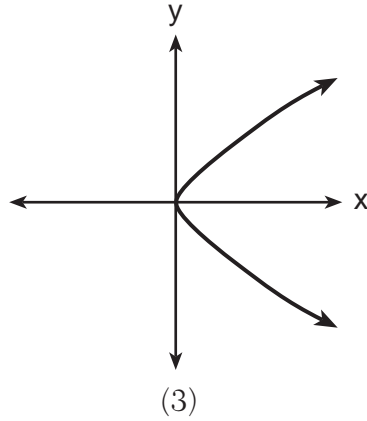
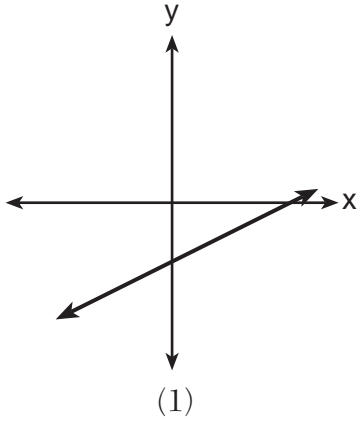
(3) $y = \frac{1}{3}x + 5$

(2) $y = -\frac{1}{3}x - 7$

(4) $y = 3x - 2$

Use this space for
computations.

8 Which graph does *not* represent the graph of a function?



9 Which value of x is in the solution set of $-3x + 8 \geq 14$?

(1) -3

(3) 0

(2) -1

(4) 3

10 What is the slope of the line that passes through the points $(4, -7)$ and $(9, 1)$?

(1) $\frac{5}{8}$

(3) $-\frac{6}{12}$

(2) $\frac{8}{5}$

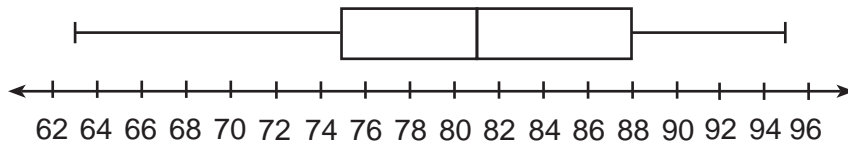
(4) $-\frac{13}{6}$

Use this space for computations.

11 The product of $\frac{4x^2}{7y^2}$ and $\frac{21y^3}{20x^4}$, expressed in simplest form, is

- (1) $0.6x^2y$ (3) $\frac{12x^2y^3}{20x^4y^2}$
(2) $\frac{3y}{5x^2}$ (4) $\frac{84x^2y^3}{140x^4y^2}$

12 The box-and-whisker plot below represents a set of grades in a college statistics class.



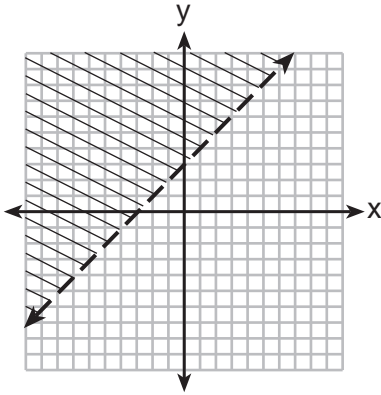
Which interval contains exactly 50% of the grades?

- (1) 63–88 (3) 75–81
(2) 63–95 (4) 75–88
- 13 An art studio has a list of information posted with each sculpture that is for sale. Each entry in the list could be classified as quantitative *except* for the

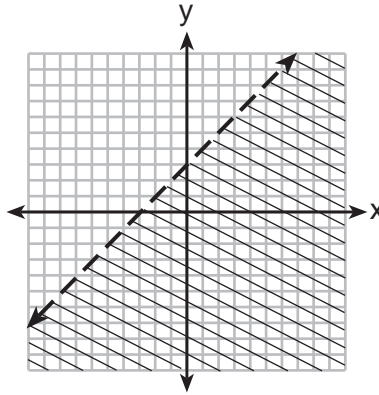
- (1) cost (3) artist
(2) height (4) weight

Use this space for computations.

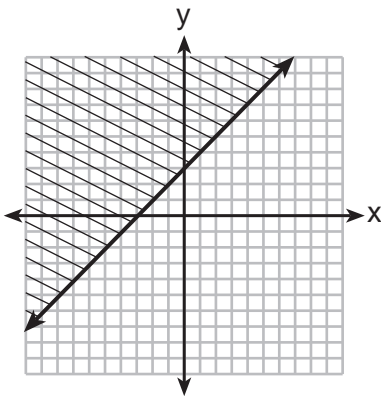
14 Which graph represents the inequality $y \geq x + 3$?



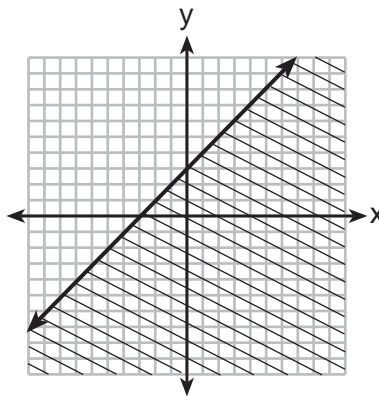
(1)



(3)



(2)



(4)

15 Using the substitution method, Ken solves the following system of equations algebraically.

$$\begin{aligned} 2x - y &= 5 \\ 3x + 2y &= -3 \end{aligned}$$

Which equivalent equation could Ken use?

(1) $3x + 2(2x - 5) = -3$

(2) $3x + 2(5 - 2x) = -3$

(3) $3\left(y + \frac{5}{2}\right) + 2y = -3$

(4) $3\left(\frac{5}{2} - y\right) + 2y = -3$

Use this space for
computations.

16 A value of x that makes the expression $\frac{x^2 + 4x - 12}{x^2 - 2x - 15}$ undefined is

(1) -6

(3) 3

(2) -2

(4) 5

17 The statement $|-15| < x < |-20|$ is true when x is equal to

(1) -16

(3) 17

(2) -14

(4) 21

18 Which equation is true?

(1) $\frac{c^5}{d^7} \div \frac{d^3}{c} = \frac{c^4}{d^4}$

(3) $\left(\frac{s^3t^8}{s^4t^5}\right)^2 = \frac{t^5}{s^2}$

(2) $(-2m^2p)^3 = -8m^6p^3$

(4) $(-2a^2b^3)(3ab^2) = a^3b^5$

19 The equation $3(4x) = (4x)3$ illustrates which property?

(1) commutative

(3) distributive

(2) associative

(4) multiplicative inverse

20 Monique has three sons who play football, two sons who play baseball, and one son who plays both sports. If all of her sons play baseball or football, how many sons does she have?

(1) 5

(3) 3

(2) 6

(4) 4

**Use this space for
computations.**

21 Written in set-builder notation, $S = \{1, 3, 5, 7, 9\}$ is

- (1) $\{x|1 < x < 9, \text{ where } x \text{ is a prime number}\}$
- (2) $\{x|1 \leq x \leq 9, \text{ where } x \text{ is a prime number}\}$
- (3) $\{x|1 < x < 9, \text{ where } x \text{ is an odd integer}\}$
- (4) $\{x|1 \leq x \leq 9, \text{ where } x \text{ is an odd integer}\}$

22 Which is the equation of a parabola that has the same vertex as the parabola represented by $y = x^2$, but is wider?

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

23 In right triangle ABC , $m\angle C = 90$, $AC = 7$, and $AB = 13$. What is the length of \overline{BC} ?

- (1) 6
- (2) 20
- (3) $\sqrt{120}$
- (4) $\sqrt{218}$

24 A cube, with faces numbered 1 to 6, is rolled, and a penny is tossed at the same time. How many elements in the sample space consist of an even number and a tail?

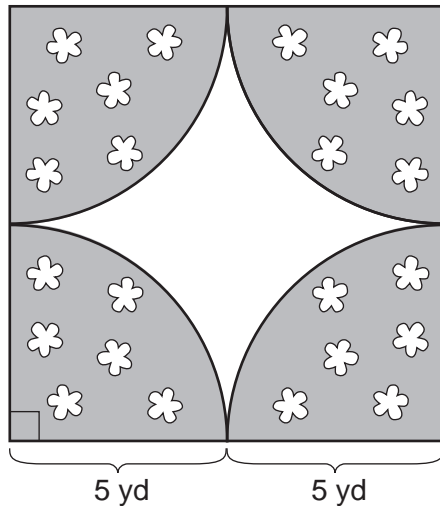
- (1) 12
- (2) 2
- (3) 3
- (4) 4

25 If the volume of a cube is 8 cubic centimeters, what is its surface area, in square centimeters?

- (1) 32
- (2) 24
- (3) 12
- (4) 4

Use this space for computations.

- 26 A designer created a garden, as shown in the diagram below. The garden consists of four quarter-circles of equal size inside a square. The designer put a fence around both the inside and the outside of the garden.



Which expression represents the amount of fencing, in yards, that the designer used for the fence?

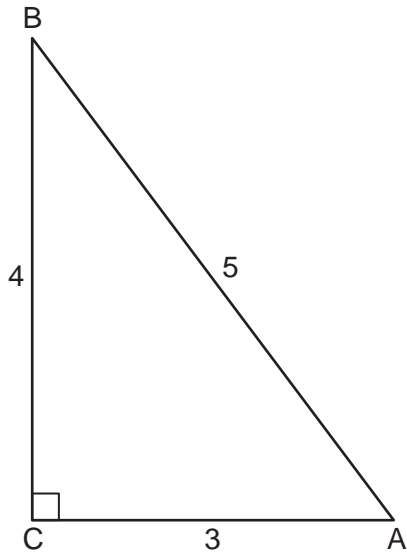
- (1) $40 + 10\pi$ (3) $100 + 10\pi$
(2) $40 + 25\pi$ (4) $100 + 25\pi$
- 27 Mr. Taylor raised all his students' scores on a recent test by five points. How were the mean and the range of the scores affected?
- (1) The mean increased by five and the range increased by five.
(2) The mean increased by five and the range remained the same.
(3) The mean remained the same and the range increased by five.
(4) The mean remained the same and the range remained the same.

28 Which fraction is equivalent to $\frac{4}{3a} - \frac{5}{2a}$?

- (1) $-\frac{1}{a}$ (3) $-\frac{7}{6a}$
(2) $-\frac{1}{5a}$ (4) $-\frac{7}{6a^2}$

Use this space for computations.

29 Which ratio represents the cosine of angle A in the right triangle below?



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

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

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

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

30 If $2y + 2w = x$, then w , in terms of x and y , is equal to

(1) $x - y$

(3) $x + y$

(2) $\frac{x - 2y}{2}$

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

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 A jogger ran at a rate of 5.4 miles per hour. Find the jogger's *exact* rate, in feet per minute.

$$1 \text{ mile} = 5,280 \text{ feet}$$

32 Express $2\sqrt{108}$ in simplest radical form.

33 Adrienne invested \$2000 in an account at a 3.5% interest rate compounded annually. She made no deposits or withdrawals on the account for 4 years. Determine, to the *nearest dollar*, the balance in the account after the 4 years.

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 Miller's Department Store is having a sale with a 25% discount on mattresses. If the sales tax rate is 8%, how much change will Frank receive from \$800 if he purchases a mattress regularly priced at \$895 during this sale?

35 The difference between two numbers is 28. The larger number is 8 less than twice the smaller number. Find *both* numbers.

[Only an algebraic solution can receive full credit.]

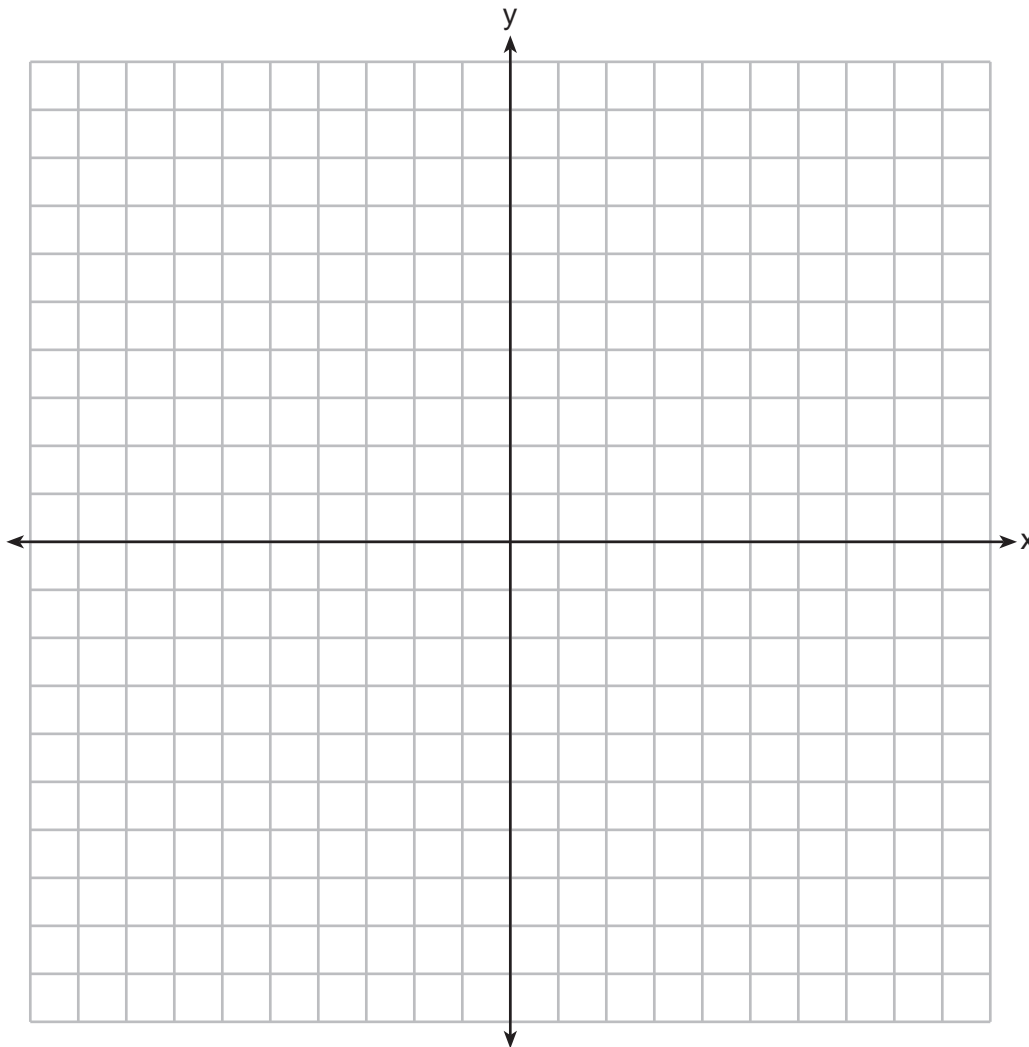
36 Janis measures the dimensions of the floor in her rectangular classroom for a rug. Her measurements are 10.50 feet by 12.25 feet. The actual measurements of the floor are 10.75 feet by 12.50 feet. Determine the relative error in calculating the area, to the *nearest thousandth*.

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, graph the following system of equations. Using the graph, determine and state *all* solutions of the system of equations.

$$y = -x^2 - 2x + 3$$
$$y + 1 = -2x$$



38 Express $\frac{3x^2 + 9x}{x^2 + 5x + 6} \div \frac{x^2 - 9}{x^2 - x - 6}$ in simplest form.

39 A bottle contains 12 red marbles and 8 blue marbles. A marble is chosen at random and not replaced. Then, a second marble is chosen at random.

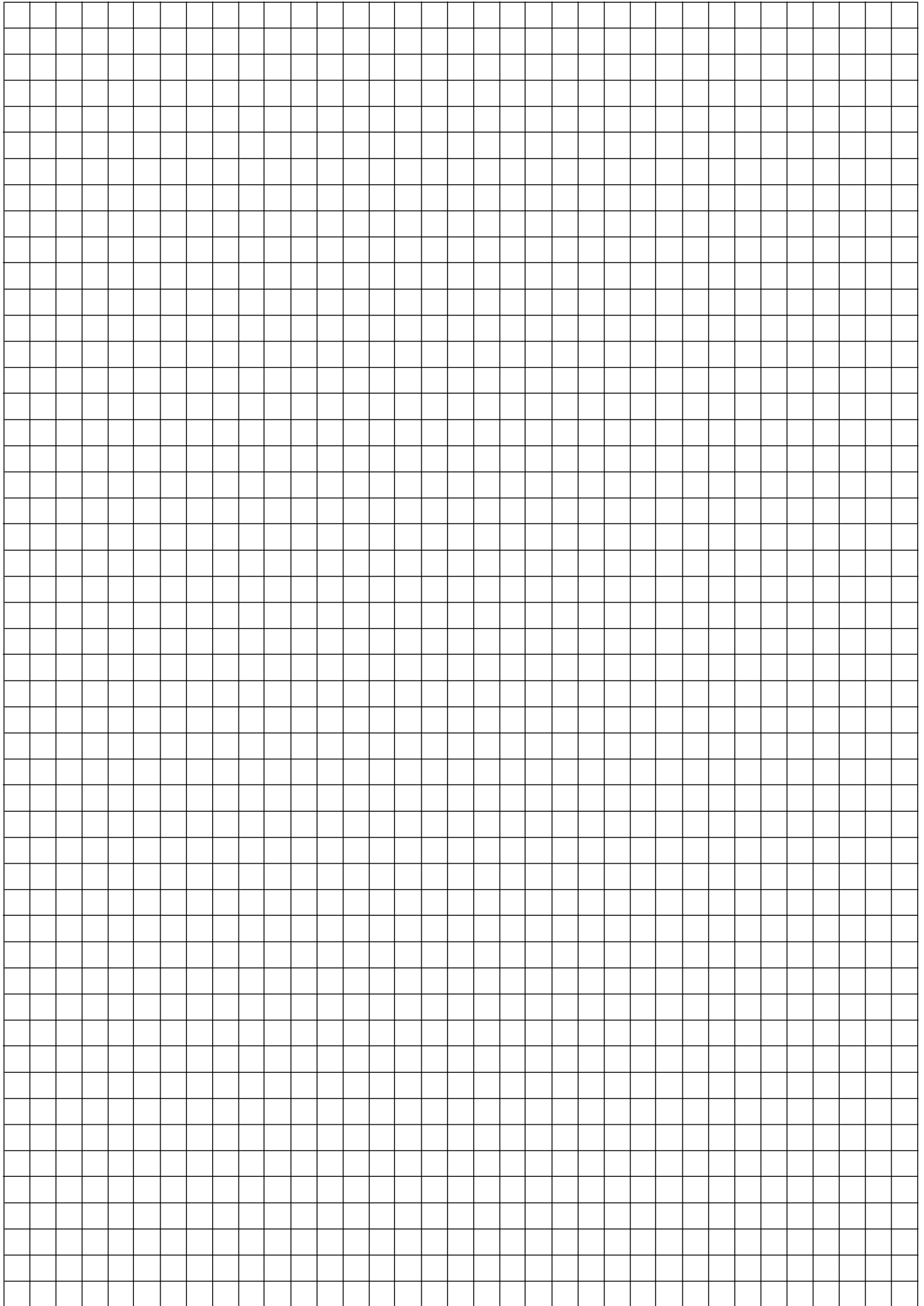
Determine the probability that the two marbles are *not* the same color.

Determine the probability that *at least* one of the marbles is red.

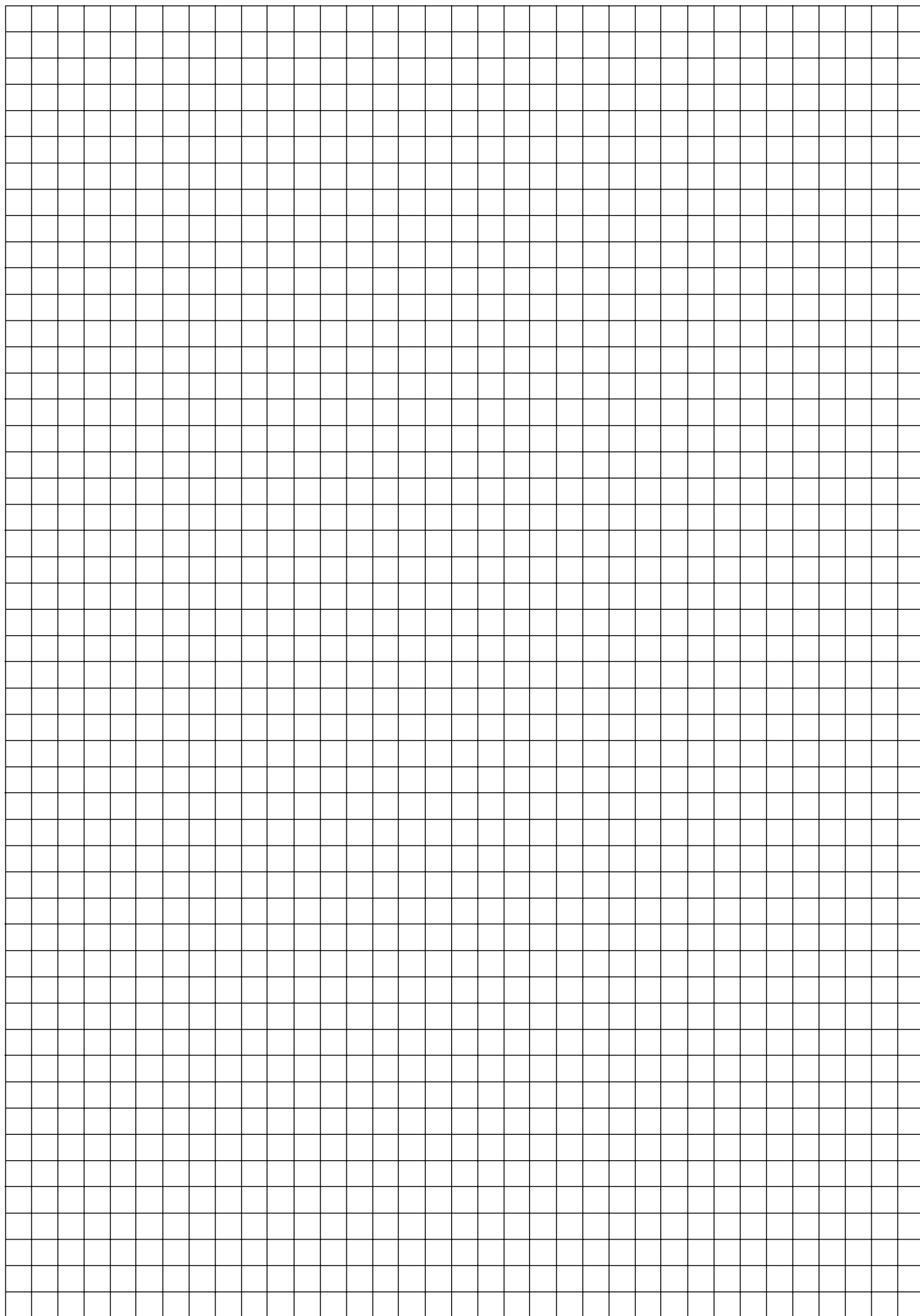
Scrap Graph Paper — This sheet will *not* be scored.

Tear Here

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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

Tuesday, August 13, 2013 — 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 Tuesday, August 13, 2013. 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) 1	(11) 2	(21) 4
(2) 1	(12) 4	(22) 4
(3) 4	(13) 3	(23) 3
(4) 3	(14) 2	(24) 3
(5) 2	(15) 1	(25) 2
(6) 4	(16) 4	(26) 1
(7) 1	(17) 3	(27) 2
(8) 3	(18) 2	(28) 3
(9) 1	(19) 1	(29) 1
(10) 2	(20) 4	(30) 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 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 otherwise specified, mathematically correct alternative solutions should be awarded appropriate credit.

(31) [2] 475.2, and correct work is shown.

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

or

[1] Appropriate work is shown, but one conceptual error is made. An appropriate answer is found.

or

[1] 475.2, but no work is shown.

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

(32) [2] $12\sqrt{3}$, and correct work is shown.

[1] Appropriate work is shown, but one computational or simplification error is made. An appropriate answer in simplest radical form is found.

or

[1] Appropriate work is shown, but one conceptual error is made. An appropriate answer in simplest radical form is found.

or

[1] Appropriate work is shown, but the answer is not expressed in simplest radical form.

or

[1] $12\sqrt{3}$, but no work is shown.

[0] The answer is expressed as a decimal, and no work is shown.

or

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

(33) [2] 2295, and correct work is shown.

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

or

[1] Appropriate work is shown, but one conceptual error is made. An appropriate balance is found.

or

[1] $2000(1 + 0.035)^4$ or an equivalent expression is written, but no further correct work is shown.

or

[1] 2295, but no work is shown.

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

Part III

For each question, use the specific criteria to award a maximum of 3 credits. Unless otherwise specified, mathematically correct alternative solutions should be awarded appropriate credit.

(34) [3] 75.05, and correct work is shown.

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

or

[2] Appropriate work is shown to find 724.95, but no further correct work is shown.

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

or

[1] Appropriate work is shown, but one conceptual error is made. An appropriate amount of change is found.

or

[1] Correct equation(s) are written, but no further correct work is shown.

or

[1] 75.05, 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] 36 and 64, and correct algebraic work is shown.
- [2] Appropriate work is shown, but one computational error is made. Appropriate values for both numbers are found.
- or***
- [2] Appropriate work is shown to find 36 or 64. No further correct work is shown.
- [1] Appropriate work is shown, but two or more computational errors are made. Appropriate values for both numbers are found.
- or***
- [1] Appropriate work is shown, but one conceptual error is made. Appropriate values for both numbers are found.
- or***
- [1] A correct equation or system of equations is written, but no further correct work is shown.
- or***
- [1] 36 and 64, but a method other than algebraic is used.
- or***
- [1] 36 and 64, but no work is shown.
- [0] 36 or 64, but no work is shown or a method other than algebraic is used.
- or***
- [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] 0.043, and correct work is shown.
- [2] Appropriate work is shown, but one computational or rounding error is made. An appropriate relative error is found.
- or***
- [2] $\frac{134.375 - 128.625}{134.375}$ or an equivalent expression is written, but the relative error is not found or is found incorrectly.
- [1] Appropriate work is shown, but two or more computational or rounding errors are made. An appropriate relative error is found.
- or***
- [1] Appropriate work is shown, but one conceptual error is made, such as dividing by 128.625. An appropriate relative error is found.
- or***
- [1] Appropriate work is shown to find 128.625 and 134.375, but no further correct work is shown.
- or***
- [1] 0.043, but no work is shown.
- [0] Appropriate work is shown to find either 128.625 or 134.375, 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.
-

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 equations are graphed correctly, and $(2, -5)$ and $(-2, 3)$ or $x = 2$, $y = -5$ and $x = -2$, $y = 3$ are stated.

[3] Appropriate work is shown, but one computational or graphing error is made. The appropriate solutions are stated.

or

[3] Both equations are graphed correctly, but only one $(2, -5)$ or $(-2, 3)$ is stated.

[2] Appropriate work is shown, but two or more computational or graphing errors are made. The appropriate solutions are stated.

or

[2] Appropriate work is shown, but one conceptual error is made. The appropriate solutions are stated.

or

[2] Both equations are graphed correctly, but the points of intersection are not stated or are stated incorrectly.

or

[2] $(2, -5)$ and $(-2, 3)$ or $x = 2$, $y = -5$ and $x = -2$, $y = 3$ are stated, but a method other than graphic is used.

[1] Appropriate work is shown, but one conceptual error and one computational or graphing error are made. The appropriate solutions are stated.

or

[1] One equation is graphed correctly, but no further correct work is shown.

or

[1] $(2, -5)$ and $(-2, 3)$ or $x = 2$, $y = -5$ and $x = -2$, $y = 3$, 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.

- (38) [4] $\frac{3x}{x+3}$, and correct work is shown.
- [3] Appropriate work is shown, but one computational, factoring, or simplification error is made. An appropriate answer is found.
- [2] Appropriate work is shown, but two or more computational, factoring, or simplification error are made. An appropriate answer is found.
- or**
- [2] Appropriate work is shown, but one conceptual error is made, such as not multiplying by the reciprocal. An appropriate answer is found.
- or**
- [2] All numerators and denominators are factored correctly, and the expression is rewritten as a product, but no further correct work is shown.
- [1] Appropriate work is shown, but one conceptual error and one computational, factoring or simplification error are made. An appropriate answer is found.
- or**
- [1] All numerators and denominators are factored correctly, but no further correct work is shown.
- or**
- [1] $\frac{3x}{x+3}$, 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.

(39) [4] $P(\text{not the same color}) = \frac{192}{380}$ or an equivalent answer and $P(\text{at least one red}) = \frac{324}{380}$ or an equivalent answer, and correct work is shown.

[3] Appropriate work is shown, but one computational error is made. Appropriate probabilities are found.

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

or

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

or

[2] Appropriate work is shown to find $P(\text{not same color}) = \frac{192}{380}$ or $P(\text{at least one red}) = \frac{324}{380}$, but no further correct work is shown.

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

or

[1] $P(\text{not the same color}) = \frac{192}{380}$ and $P(\text{at least one red}) = \frac{324}{380}$, 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.

Map to Core Curriculum

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

Regents Examination in Integrated Algebra August 2013

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

The *Chart for Determining the Final Examination Score for the August 2013 Regents Examination in Integrated Algebra* will be posted on the Department's web site at: <http://www.p12.nysed.gov/assessment/> on Tuesday, August 13, 2013. 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 2013

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