

MATHEMATICS A

Tuesday, August 17, 2004 — 8:30 to 11:30 a.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. 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.

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 minimum of a scientific calculator, a straightedge (ruler), and a compass must be available for your use while taking this examination.

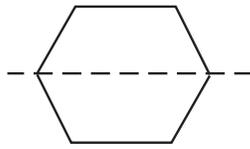
DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN.

Part I

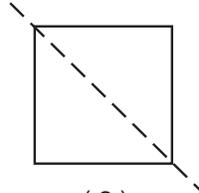
Answer all questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. For each question, write on the separate answer sheet the numeral preceding the word or expression that best completes the statement or answers the question. [60]

1 Which diagram shows a dotted line that is *not* a line of symmetry?

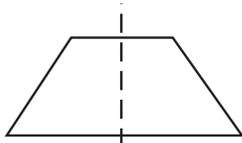
Use this space for computations.



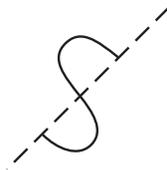
(1)



(3)



(2)

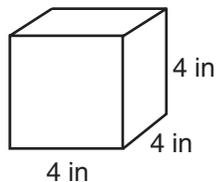


(4)

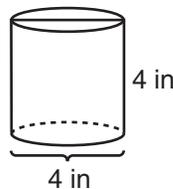
2 Rosario and Enrique are in the same mathematics class. On the first five tests, Rosario received scores of 78, 77, 64, 86, and 70. Enrique received scores of 90, 61, 79, 73, and 87. How much higher was Enrique's average than Rosario's average?

- | | |
|---------------|--------------|
| (1) 15 points | (3) 3 points |
| (2) 2 points | (4) 4 points |

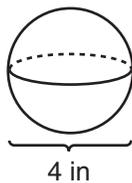
3 Which diagram represents the figure with the greatest volume?



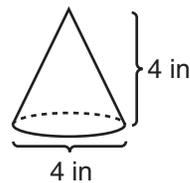
(1)



(3)



(2)



(4)

**Use this space for
computations.**

4 The school cafeteria offers five sandwich choices, four desserts, and three beverages. How many different meals consisting of one sandwich, one dessert, and one beverage can be ordered?

- (1) 1 (3) 3
(2) 12 (4) 60

5 When $-9x^5$ is divided by $-3x^3$, $x \neq 0$, the quotient is

- (1) $-3x^2$ (3) $-27x^{15}$
(2) $3x^2$ (4) $27x^8$

6 What is the value of n in the equation $0.6(n + 10) = 3.6$?

- (1) -0.4 (3) -4
(2) 5 (4) 4

7 \overleftrightarrow{AB} and \overleftrightarrow{CD} intersect at point E , $m\angle AEC = 6x + 20$, and $m\angle DEB = 10x$. What is the value of x ?

- (1) $4\frac{3}{8}$ (3) 10
(2) 5 (4) $21\frac{1}{4}$

8 If $x = -4$ and $y = 3$, what is the value of $x - 3y^2$?

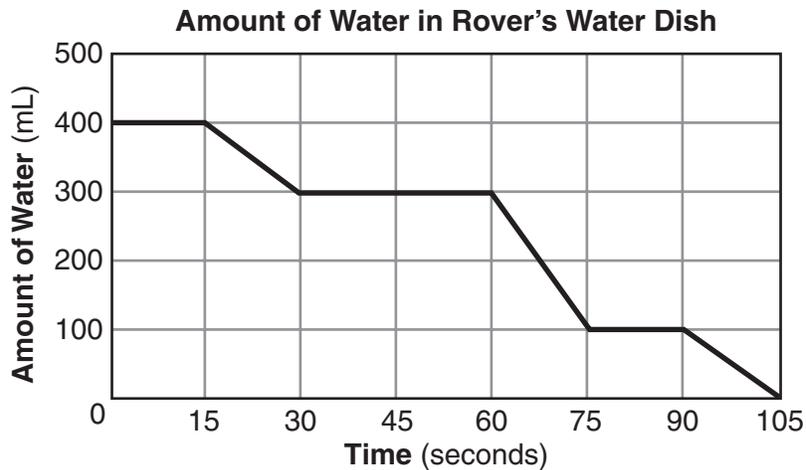
- (1) -13 (3) -31
(2) -23 (4) -85

Use this space for computations.

9 What are the coordinates of P' , the image of $P(-4,0)$ under the translation $(x - 3, y + 6)$?

- (1) $(-7,6)$ (3) $(1,6)$
(2) $(7,-6)$ (4) $(2,-3)$

10 The accompanying graph shows the amount of water left in Rover's water dish over a period of time.



How long did Rover wait from the end of his first drink to the start of his second drink of water?

- (1) 10 sec (3) 60 sec
(2) 30 sec (4) 75 sec

11 Which inequality is represented in the accompanying graph?



- (1) $-3 \leq x < 4$ (3) $-3 < x < 4$
(2) $-3 \leq x \leq 4$ (4) $-3 < x \leq 4$

12 The ratio of Tariq's telephone bill to Pria's telephone bill was 7:5. Tariq's bill was \$14 more than Pria's bill. What was Tariq's bill?

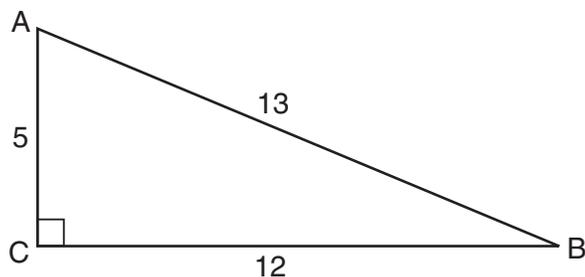
- (1) \$21 (3) \$35
(2) \$28 (4) \$49

13 Which equation illustrates the distributive property of multiplication over addition?

- (1) $6(3a + 4b) = 18a + 4b$
- (2) $6(3a + 4b) = 18a + 24b$
- (3) $6(3a + 4b) = (3a + 4b)6$
- (4) $6(3a + 4b) = 6(4b + 3a)$

Use this space for computations.

14 Which ratio represents $\cos A$ in the accompanying diagram of $\triangle ABC$?



- (1) $\frac{5}{13}$
- (2) $\frac{12}{13}$
- (3) $\frac{12}{5}$
- (4) $\frac{13}{5}$

15 A rocket car on the Bonneville Salt Flats is traveling at a rate of 640 miles per hour. How much time would it take for the car to travel 384 miles at this rate?

- (1) 36 minutes
- (2) 245 minutes
- (3) 256 minutes
- (4) 1.7 hours

16 What is the inverse of the statement “If I do not buy a ticket, then I do not go to the concert”?

- (1) If I buy a ticket, then I do not go to the concert.
- (2) If I buy a ticket, then I go to the concert.
- (3) If I go to the concert, then I buy a ticket.
- (4) If I do not go to the concert, then I do not buy a ticket.

17 If the value of dependent variable y increases as the value of independent variable x increases, the graph of this relationship could be a

- (1) horizontal line
- (2) vertical line
- (3) line with a negative slope
- (4) line with a positive slope

Use this space for computations.

18 What is the image of point $(-3,-1)$ under a reflection in the origin?

- (1) $(3,1)$ (3) $(1,3)$
(2) $(-3,1)$ (4) $(-1,-3)$

19 Seventy-eight students participate in one or more of three sports: baseball, tennis, and golf. Four students participate in all three sports; five play both baseball and golf, only; two play both tennis and golf, only; and three play both baseball and tennis, only. If seven students play only tennis and one plays only golf, what is the total number of students who play only baseball?

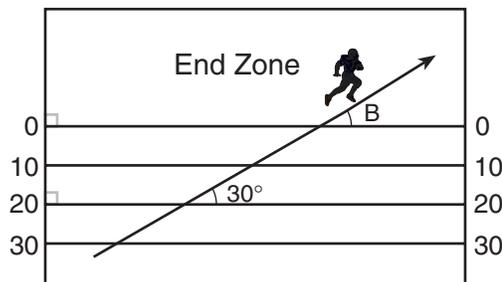
- (1) 12 (3) 56
(2) 44 (4) 60

20 Which linear equation represents the data in the accompanying table?

c	d
0	20.00
1	21.50
2	23.00
3	24.50

- (1) $d = 1.50c$ (3) $d = 20.00c + 1.50$
(2) $d = 1.50c + 20.00$ (4) $d = 21.50c$

21 The accompanying diagram shows a football player crossing the 20-yard line at an angle of 30° and continuing along the same path.



What is the measure of angle B , where the player crosses into the end zone?

- (1) 30° (3) 150°
(2) 60° (4) 180°

**Use this space for
computations.**

27 What is the contrapositive of the statement “If I study, then I pass the test”?

- (1) I pass the test if I study.
- (2) If I do not study, then I do not pass the test.
- (3) If I do not pass the test, then I do not study.
- (4) If I pass the test, then I study.

28 What is the sum, in degrees, of the measures of the interior angles of a stop sign, which is in the shape of an octagon?

- (1) 360
- (2) 1,080
- (3) 1,440
- (4) 1,880

29 What point is the intersection of the graphs of the lines $2x - y = 3$ and $x + y = 3$?

- (1) (2,1)
- (2) (1,2)
- (3) (3,0)
- (4) (3,3)

30 Selena and Tracey play on a softball team. Selena has 8 hits out of 20 times at bat, and Tracey has 6 hits out of 16 times at bat. Based on their past performance, what is the probability that both girls will get a hit next time at bat?

- (1) 1
 - (2) $\frac{14}{36}$
 - (3) $\frac{31}{40}$
 - (4) $\frac{48}{320}$
-

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. [10]

31 Two angles are complementary. One angle has a measure that is five times the measure of the other angle. What is the measure, in degrees, of the larger angle?

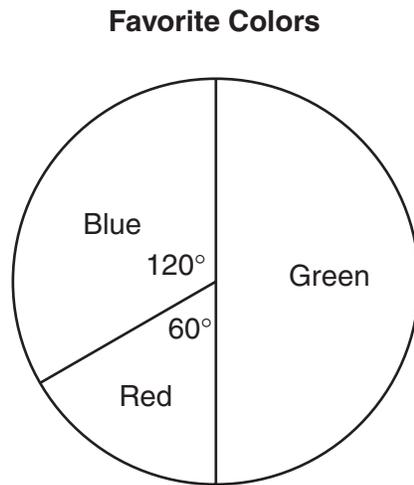
32 Given: $\frac{\sqrt{99}}{11}$, $\sqrt{164}$, $\sqrt{196}$

Identify the expression that is a rational number and explain why it is rational.

33 Dylan says that all isosceles triangles are acute triangles. Mary Lou wants to prove that Dylan is *not* correct. Sketch an isosceles triangle that Mary Lou could use to show that Dylan's statement is not true. In your sketch, state the measure of *each* angle of the isosceles triangle.

34 Factor completely: $3ax^2 - 27a$

- 35 The accompanying circle graph shows the favorite colors of the 300 students in the ninth grade. How many students chose red as their favorite color?



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. [6]

- 36 Walter is a waiter at the Towne Diner. He earns a daily wage of \$50, plus tips that are equal to 15% of the total cost of the dinners he serves. What was the total cost of the dinners he served if he earned \$170 on Tuesday?

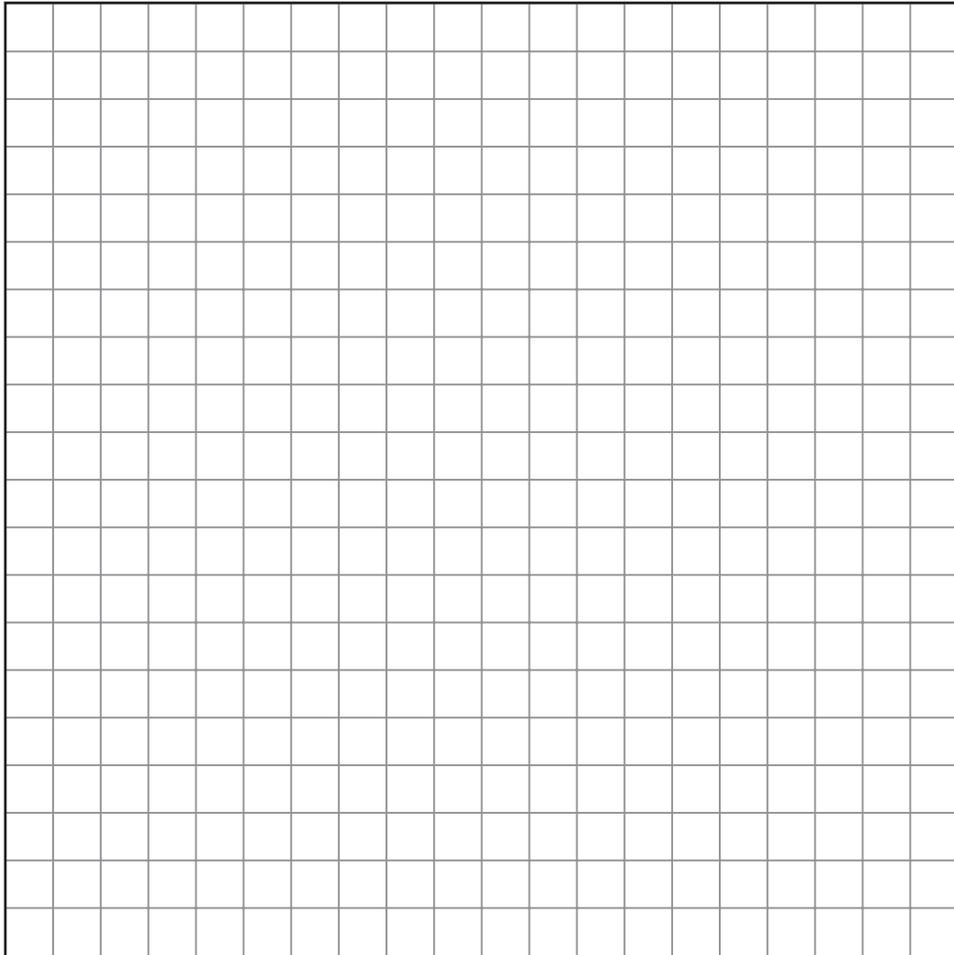
37 The following set of data represents the scores on a mathematics quiz:

58, 79, 81, 99, 68, 92, 76, 84, 53, 57,
81, 91, 77, 50, 65, 57, 51, 72, 84, 89

Complete the frequency table below and, on the accompanying grid, draw and label a frequency histogram of these scores.

Mathematics Quiz Scores

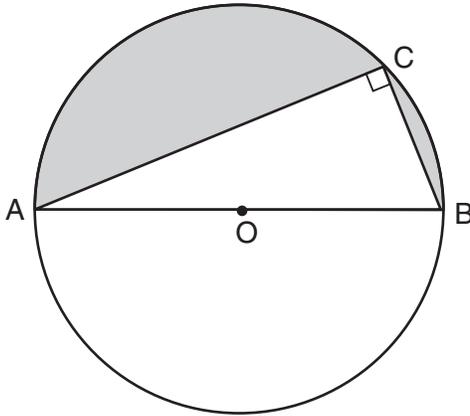
Interval	Tally	Frequency
50–59		
60–69		
70–79		
80–89		
90–99		



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. [8]

- 38 In the accompanying diagram, right triangle ABC is inscribed in circle O , diameter $AB = 26$, and $CB = 10$. Find, to the nearest square unit, the area of the shaded region.

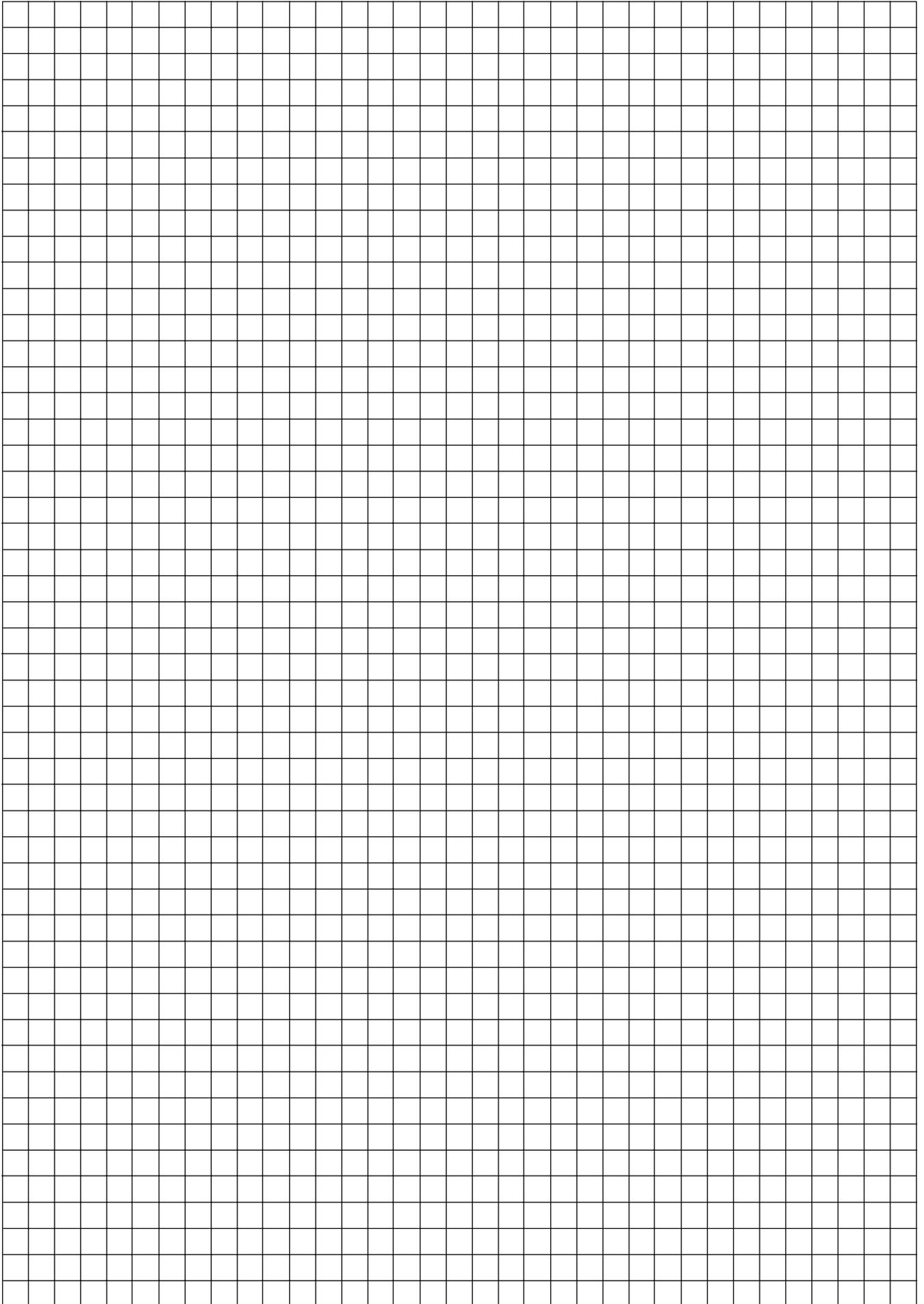


39 Solve for all values of x that satisfy the equation $\frac{x}{x+3} = \frac{5}{x+7}$.

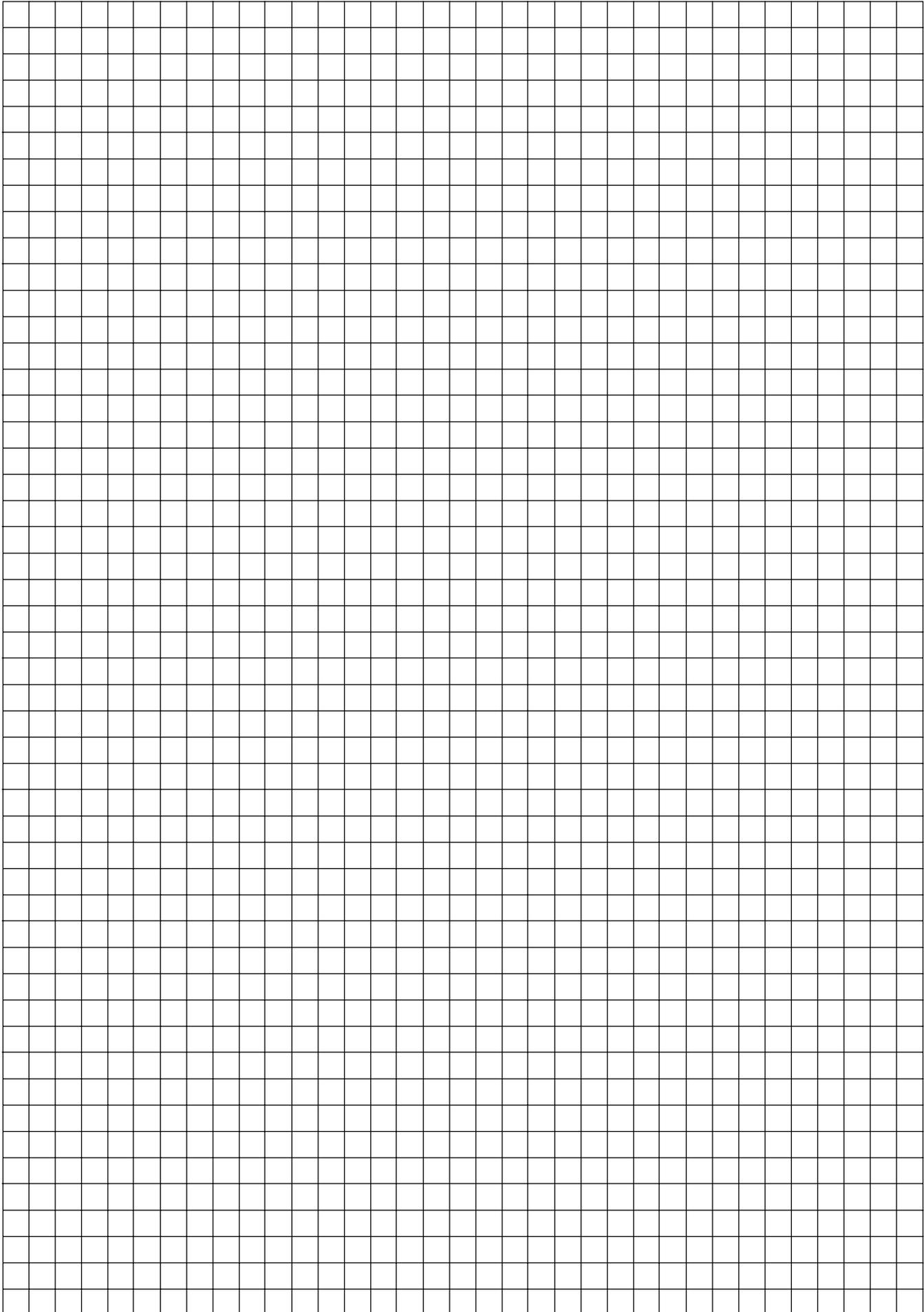
Scrap Graph Paper — This sheet will *not* be scored.

Tear Here

Tear Here



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



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Tear Here

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS A

Tuesday, August 17, 2004 — 8:30 to 11:30 a.m., only

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.

Signature

Tear Here

FOR TEACHERS ONLY

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

MATHEMATICS A

Tuesday, August 17, 2004 — 8:30 to 11:30 a.m., only

SCORING KEY

Mechanics of Rating

The following procedures are to be followed for scoring student answer papers for the Mathematics A examination. More detailed information about scoring is provided in the publication *Information Booklet for Administering and Scoring the Regents Examinations in Mathematics A and Mathematics B*.

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 checkmarks 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 Tuesday, August 17, 2004. 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) 4	(6) 3	(11) 4	(16) 2	(21) 1	(26) 4
(2) 3	(7) 2	(12) 4	(17) 4	(22) 1	(27) 3
(3) 1	(8) 3	(13) 2	(18) 1	(23) 3	(28) 2
(4) 4	(9) 1	(14) 1	(19) 3	(24) 3	(29) 1
(5) 2	(10) 2	(15) 1	(20) 2	(25) 2	(30) 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. Visit the site <http://www.emsc.nysed.gov/osa/> and select the link “Latest Information” for any recently posted information regarding this examination. This site should be checked before the rating process for this examination begins and at least one more time before the final scores for the examination are recorded.

General Rules for Applying Mathematics Rubrics

I. General Principles for Rating

The rubrics for the constructed-response questions on the Regents Examinations in Mathematics A and Mathematics B 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 Administering and Scoring Examinations in Mathematics A and Mathematics B*, 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] 75, and appropriate work is shown.

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

or

[1] An incorrect equation of equal difficulty, such as $x + 5x = 180$, is solved appropriately, and an appropriate angle measure is found.

or

[1] A correct equation is written and solved for x , but no further correct work is shown.

or

[1] 75, 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] $\sqrt{196}$, and an appropriate explanation is given.

[1] An incorrect answer is chosen, but an appropriate explanation is given.

or

[1] $\sqrt{196}$, but no explanation or an incorrect explanation is given.

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

MATHEMATICS A – *continued*

- (33) [2] An isosceles triangle that is not acute is drawn, and its three angles are labeled, such as 20, 20, 140 or 45, 45, 90.

[1] An isosceles triangle is drawn that shows an angle that is not acute, but the base angles are not labeled.

or

[1] The three angles are stated correctly, but no triangle is drawn.

[0] The triangle that is drawn and labeled is not isosceles or is acute.

or

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

- (34) [2] $3a(x - 3)(x + 3)$, and appropriate work is shown.

[1] Appropriate work is shown, but one factoring error is made, or the expression is not factored completely.

or

[1] $3a(x - 3)(x + 3)$, 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.

- (35) [2] 50, and appropriate work is shown, such as using a proportion.

[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] An incorrect fractional part is determined, but an appropriate number of students is found.

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.

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.

- (36) [3] \$800, and appropriate work is shown, such as $0.15x + 50 = 170$ or a table of values or trial and error with at least three trials and appropriate checks.
- [2] Appropriate work is shown, but one computational error is made.
- or***
- [2] The trial-and-error method is used to find the correct solution, but only two trials and appropriate checks are shown.
- [1] Appropriate work is shown, but two or more computational errors are made.
- or***
- [1] Appropriate work is shown, but one conceptual error is made.
- or***
- [1] Appropriate work is shown, but the \$50 per day is not included in his pay, resulting in an answer of \$1,133.33.
- or***
- [1] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but no solution is found.
- or***
- [1] \$800, but no work or only one trial with an appropriate check 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.

MATHEMATICS A – *continued*

- (37) [3] The frequency table is completed correctly, showing frequencies of 6, 2, 4, 5, and 3, and a frequency histogram is drawn and labeled correctly.
- [2] The frequency table is completed correctly, but one graphing error is made, such as not labeling the axes, having nonequal intervals, or starting the x -axis at 50.
- or*
- [2] The frequency table is completed incorrectly, but an appropriate frequency histogram is drawn.
- or*
- [2] The frequency histogram is drawn and labeled correctly, but the frequency table is not completed.
- [1] The frequency table is completed correctly, but two or more graphing errors are made.
- or*
- [1] The frequency table is completed correctly, but no frequency histogram is drawn or a bar graph 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.
-

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.

- (38) [4] 145, and appropriate work is shown, such as $\left(\frac{1}{2}\pi 13^2\right) - \left(\frac{1}{2} \cdot 10 \cdot 24\right)$.
- [3] Appropriate work is shown, but one computational or rounding error is made or the answer is expressed in terms of π .
- or*
- [3] Appropriate work is shown, but the area of the entire circle is used to calculate the area of the shaded region.
- or*
- [3] The areas of the semicircle and triangle are found correctly, but they are not subtracted to find the shaded area.
- [2] Appropriate work is shown, but two or more computational or rounding errors are made.
- or*
- [2] An incorrect formula is used to find the area of the triangle or the semicircle, but an appropriate shaded area is found.
- or*
- [2] Only the area of the semicircle or the area of the triangle is found correctly, and no further correct work is shown.
- [1] Both the areas of the semicircle and the triangle are found incorrectly, but they are subtracted to find an appropriate shaded area.
- or*
- [1] Only the length of \overline{AC} is found correctly.
- or*
- [1] 145, 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.

MATHEMATICS A – *continued*

(39) [4] 3 and -5 , and appropriate work is shown, such as $x(x + 7) = 5(x + 3)$ or trial and error with at least three trials and appropriate checks for each solution.

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

or

[3] Appropriate work is shown, but only one correct solution is found.

or

[3] The trial-and-error method is used to find both correct solutions, but only two trials and appropriate checks are shown for each solution.

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

or

[2] A correct quadratic equation is written and factored, but no further correct work is shown.

or

[2] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but neither solution is found.

[1] A correct quadratic equation is written, but no further correct work is shown.

or

[1] 3 and -5 , but no work or only one trial with an appropriate check is shown.

[0] 3 *or* -5 , but no work or only one trial with an appropriate check 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
Mathematical Reasoning	16, 19, 27
Number and Numeration	13, 22, 32
Operations	1, 5, 8, 9, 18, 23, 24, 34
Modeling/Multiple Representation	3, 7, 11, 21, 25, 26, 28, 31, 33
Measurement	2, 12, 14, 15, 35, 37, 38
Uncertainty	4, 30
Patterns/Functions	6, 10, 17, 20, 29, 36, 39

Regents Examination in Mathematics A

August 2004

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

The Chart for Determining the Final Examination Score for the August 2004 Regents Examination in Mathematics A, normally located on this page, will be posted on the Department’s web site <http://www.emsc.nysed.gov/osa/> on Tuesday, August 17, 2004. Conversion charts provided for previous administrations of the Mathematics A examination must NOT be used to determine students’ final scores for this administration.

Regents Examination in Mathematics A August 2004

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

Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score
84	100	55	81	27	53
83	99	54	80	26	52
82	99	53	79	25	50
81	98	52	79	24	48
80	97	51	78	23	47
79	96	50	77	22	45
78	96	49	77	21	43
77	95	48	76	20	42
76	94	47	75	19	40
75	93	46	75	18	38
74	93	45	74	17	36
73	92	44	73	16	34
72	91	43	72	15	33
71	90	42	71	14	31
70	90	41	70	13	29
69	89	40	69	12	27
68	88	39	68	11	25
67	88	38	67	10	22
66	87	37	66	9	20
65	86	36	65	8	18
64	86	35	64	7	16
63	85	34	63	6	14
62	84	33	61	5	12
61	84	32	60	4	9
60	83	31	59	3	7
59	83	30	57	2	5
58	82	29	56	1	2
57	82	28	55	0	0
56	81				

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 scaled score that corresponds to that raw score. The scaled score is the student's final examination score. Enter this score in the space labeled "Scaled Score" on the student's answer sheet.

All student answer papers that receive a scaled score of 60 through 64 **must** be scored a second time. 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 scaled scores corresponding to raw scores in the conversion chart may 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 Mathematics A examination.