The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS A

Tuesday, June 17, 2003 — 1:15 to 4:15 p.m., only

Print Your Name:

Print Your School's Name:

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

Scrap paper is not permitted for any part of this examination, but you may use the blank spaces in this booklet as scrap paper. A perforated sheet of scrap graph paper is provided at the end of this booklet for any question for which graphing may be helpful but is not required. 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 35 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. [40]

1 The number 8.375×10^{-3} is equivalent to
(1) 0.0008375   (3) 0.08375
(2) 0.008375   (4) 8,375

2 The accompanying diagram shows a square with side y inside a square with side x.
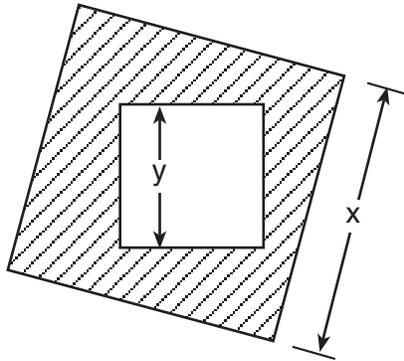
Which expression represents the area of the shaded region?
(1) x^2 (3) $y^2 - x^2$
(2) y^2 (4) $x^2 - y^2$

3 Which expression represents an irrational number?

(1) $\sqrt{2}$ (3) 0.17

(2) $\frac{1}{2}$ (4) 0

4 Which shape does *not* have rotational symmetry?
(1) trapezoid   (3) circle
(2) regular pentagon   (4) square

5 Bob and Laquisha have volunteered to serve on the Junior Prom Committee. The names of twenty volunteers, including Bob and Laquisha, are put into a bowl. If two names are randomly drawn from the bowl without replacement, what is the probability that Bob's name will be drawn first and Laquisha's name will be drawn second?

(1) $\frac{1}{20} \cdot \frac{1}{20}$　　　　(3) $\frac{2}{20}$

(2) $\frac{1}{20} \cdot \frac{1}{19}$　　　　(4) $\frac{2}{20!}$

6 Tori computes the value of 8×95 in her head by thinking $8(100 - 5) = 8 \times 100 - 8 \times 5$. Which number property is she using?

(1) associative　　　　(3) commutative
(2) distributive　　　　(4) closure

7 A triangle has sides whose lengths are 5, 12, and 13. A similar triangle could have sides with lengths of

(1) 3, 4, and 5　　　　(3) 7, 24, and 25
(2) 6, 8, and 10　　　　(4) 10, 24, and 26

8 Which statement is logically equivalent to "If it is Saturday, then I am not in school"?

(1) If I am not in school, then it is Saturday.
(2) If it is not Saturday, then I am in school.
(3) If I am in school, then it is not Saturday.
(4) If it is Saturday, then I am in school.

9 A translation moves $P(3,5)$ to $P'(6,1)$. What are the coordinates of the image of point $(-3,-5)$ under the same translation?

(1) $(0,-9)$　　　　(3) $(-6,-1)$
(2) $(-5,-3)$　　　　(4) $(-6,-9)$

10 If $x + y = 9x + y$, then x is equal to

(1) y (3) 0

(2) $\frac{1}{5}y$ (4) 8

11 Which number is in the solution set of the inequality $5x + 3 > 38$?

(1) 5   (3) 7

(2) 6   (4) 8

12 The expression $3^2 \cdot 3^3 \cdot 3^4$ is equivalent to

(1) 27^9 (3) 3^9

(2) 27^{24} (4) 3^{24}

13 What is the solution set of the equation $x^2 - 5x - 24 = 0$?

(1) $\{-3,8\}$ (3) $\{3,8\}$

(2) $\{-3,-8\}$ (4) $\{3,-8\}$

14 If the expression $3 - 4^2 + \frac{6}{2}$ is evaluated, what would be done *last*?

(1) subtracting   (3) adding

(2) squaring   (4) dividing

15 What is the additive inverse of $\frac{2}{3}$?

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

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

16 The sum of $\sqrt{18}$ and $\sqrt{72}$ is

    (1) $\sqrt{90}$ (3) $3\sqrt{10}$

    (2) $9\sqrt{2}$ (4) $6\sqrt{3}$

17 What is the inverse of the statement "If Julie works hard, then she succeeds"?

    (1) If Julie succeeds, then she works hard.
    (2) If Julie does not succeed, then she does not work hard.
    (3) If Julie works hard, then she does not succeed.
    (4) If Julie does not work hard, then she does not succeed.

18 If one factor of $56x^4y^3 - 42x^2y^6$ is $14x^2y^3$, what is the other factor?

    (1) $4x^2 - 3y^3$ (3) $4x^2y - 3xy^3$
    (2) $4x^2 - 3y^2$ (4) $4x^2y - 3xy^2$

19 For which value of x is the expression $\dfrac{3x-6}{x-4}$ undefined?

    (1) 0   (3) −4
    (2) 2   (4) 4

20 How many different five-member teams can be made from a group of eight students, if each student has an equal chance of being chosen?

    (1) 40   (3) 336
    (2) 56   (4) 6,720

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]

21 The student scores on Mrs. Frederick's mathematics test are shown on the stem-and-leaf plot below.

$$
\begin{array}{c|ccccccc}
4 & 3 \\
6 & 0 & 5 & 5 & 7 & 9 \\
7 & 2 & 5 & 6 & 8 & 9 & 9 & 9 \\
9 & 0 & 1 & 2 & 5 & 9 \\
\end{array}
$$
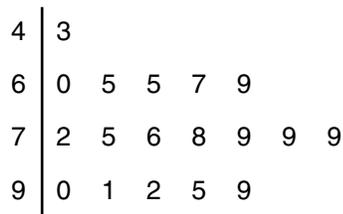
| Key: 4 | 3 = 43 points |

Find the median of these scores.

22 The lengths of the sides of two similar rectangular billboards are in the ratio 5:4. If 250 square feet of material is needed to cover the larger billboard, how much material, in square feet, is needed to cover the smaller billboard?

23 Solve for m: $0.6m + 3 = 2m + 0.2$

24 In the accompanying diagram, line m is parallel to line p, line t is a transversal, m$\angle a = 3x + 12$, and m$\angle b = 2x + 13$. Find the value of x.
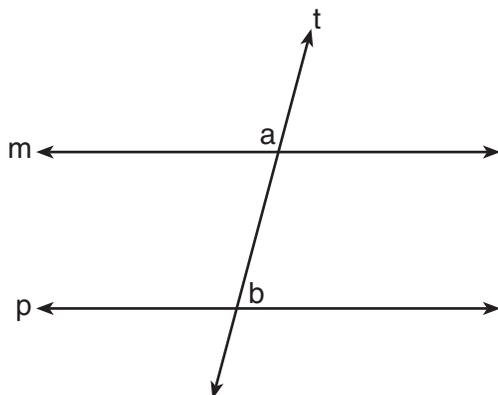
25 On the accompanying diagram of $\triangle ABC$, use a compass and a straight-edge to construct a median from A to $\overline{BC}$.

A

B

C
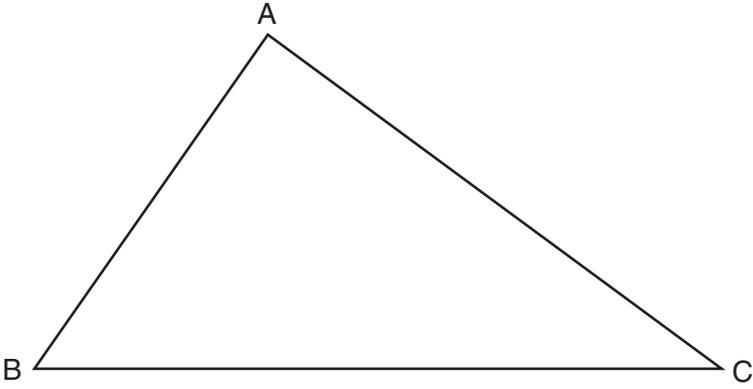
Part III

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. [15]

26 Seth has one less than twice the number of compact discs (CDs) that Jason has. Raoul has 53 more CDs than Jason has. If Seth gives Jason 25 CDs, Seth and Jason will have the same number of CDs. How many CDs did *each* of the three boys have to begin with?

27 Tina's preschool has a set of cardboard building blocks, each of which measures 9 inches by 9 inches by 4 inches. How many of these blocks will Tina need to build a wall 4 inches thick, 3 feet high, and 12 feet long?

28 In a town election, candidates *A* and *B* were running for mayor. There were 30,500 people eligible to vote, and $\frac{3}{4}$ of them actually voted. Candidate *B* received $\frac{1}{3}$ of the votes cast. How many people voted for candidate *B*? What percent of the votes cast, to the *nearest tenth of a percent*, did candidate *A* receive?

29 A certain state is considering changing the arrangement of letters and numbers on its license plates. The two options the state is considering are:

Option 1: three letters followed by a four-digit number with repetition of both letters and digits allowed

Option 2: four letters followed by a three-digit number without repetition of either letters or digits

[Zero may be chosen as the first digit of the number in either option.]

Which option will enable the state to issue more license plates? How many *more* different license plates will that option yield?

30 To get from his high school to his home, Jamal travels 5.0 miles east and then 4.0 miles north. When Sheila goes to her home from the same high school, she travels 8.0 miles east and 2.0 miles south. What is the measure of the shortest distance, to the *nearest tenth of a mile,* between Jamal's home and Sheila's home? [The use of the accompanying grid is optional.]

N

W ← → E

S
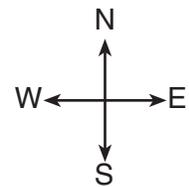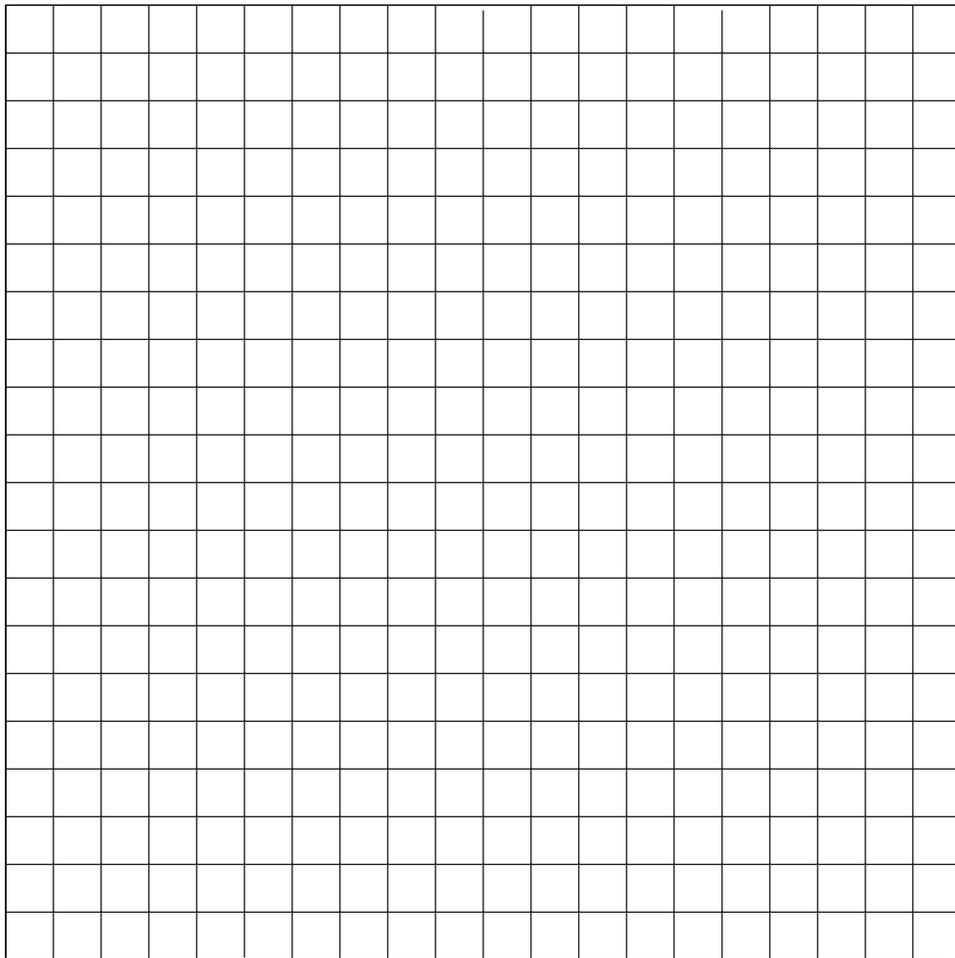
Part IV

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. [20]

31 Deborah built a box by cutting 3-inch squares from the corners of a rectangular sheet of cardboard, as shown in the accompanying diagram, and then folding the sides up. The volume of the box is 150 cubic inches, and the longer side of the box is 5 inches more than the shorter side. Find the number of inches in the shorter side of the *original* sheet of cardboard.
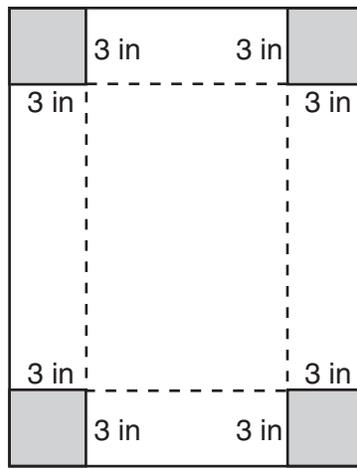
32 A triangular park is formed by the intersection of three streets, Bridge Street, Harbor Place, and College Avenue, as shown in the accompanying diagram. A walkway parallel to Harbor Place goes through the park. A time capsule has been buried in the park in a location that is equidistant from Bridge Street and College Avenue and 5 yards from the walkway. Indicate on the diagram with an **X** *each* possible location where the time capsule could be buried.
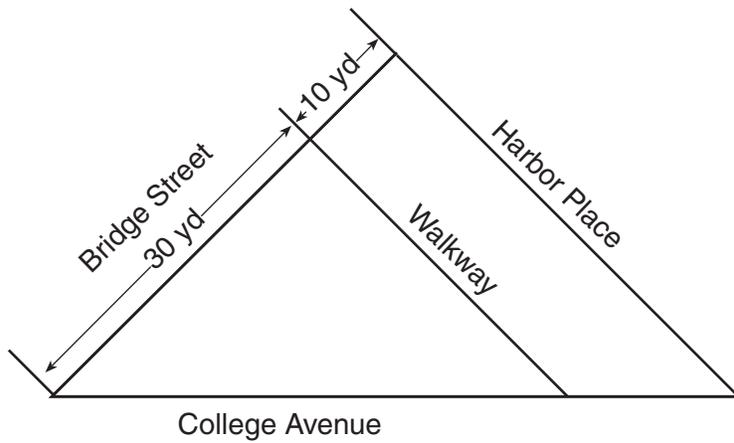
33 An architect is designing a museum entranceway in the shape of a parabolic arch represented by the equation $y = -x^2 + 20x$, where $0 \leq x \leq 20$ and all dimensions are expressed in feet. On the accompanying set of axes, sketch a graph of the arch and determine its maximum height, in feet.
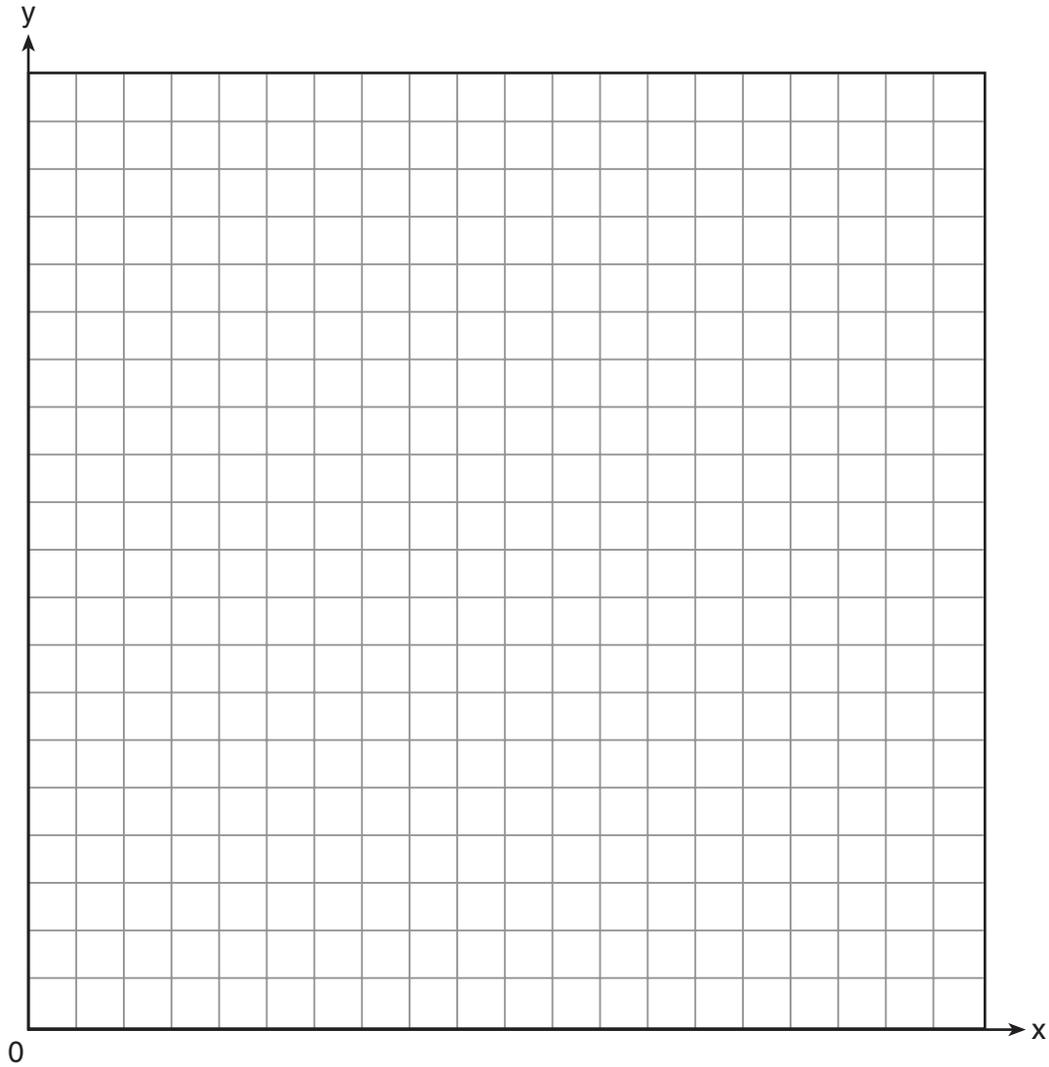
34 A straw is placed into a rectangular box that is 3 inches by 4 inches by 8 inches, as shown in the accompanying diagram. If the straw fits exactly into the box diagonally from the bottom left front corner to the top right back corner, how long is the straw, to the *nearest tenth of an inch*?

8 in

3 in

4 in
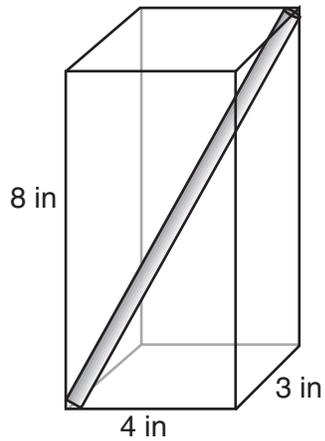
35 The senior class is sponsoring a dance. The cost of a student disk jockey is $40, and tickets sell for $2 each. Write a linear equation and, on the accompanying grid, graph the equation to represent the relationship between the number of tickets sold and the profit from the dance. Then find how many tickets must be sold to break even.
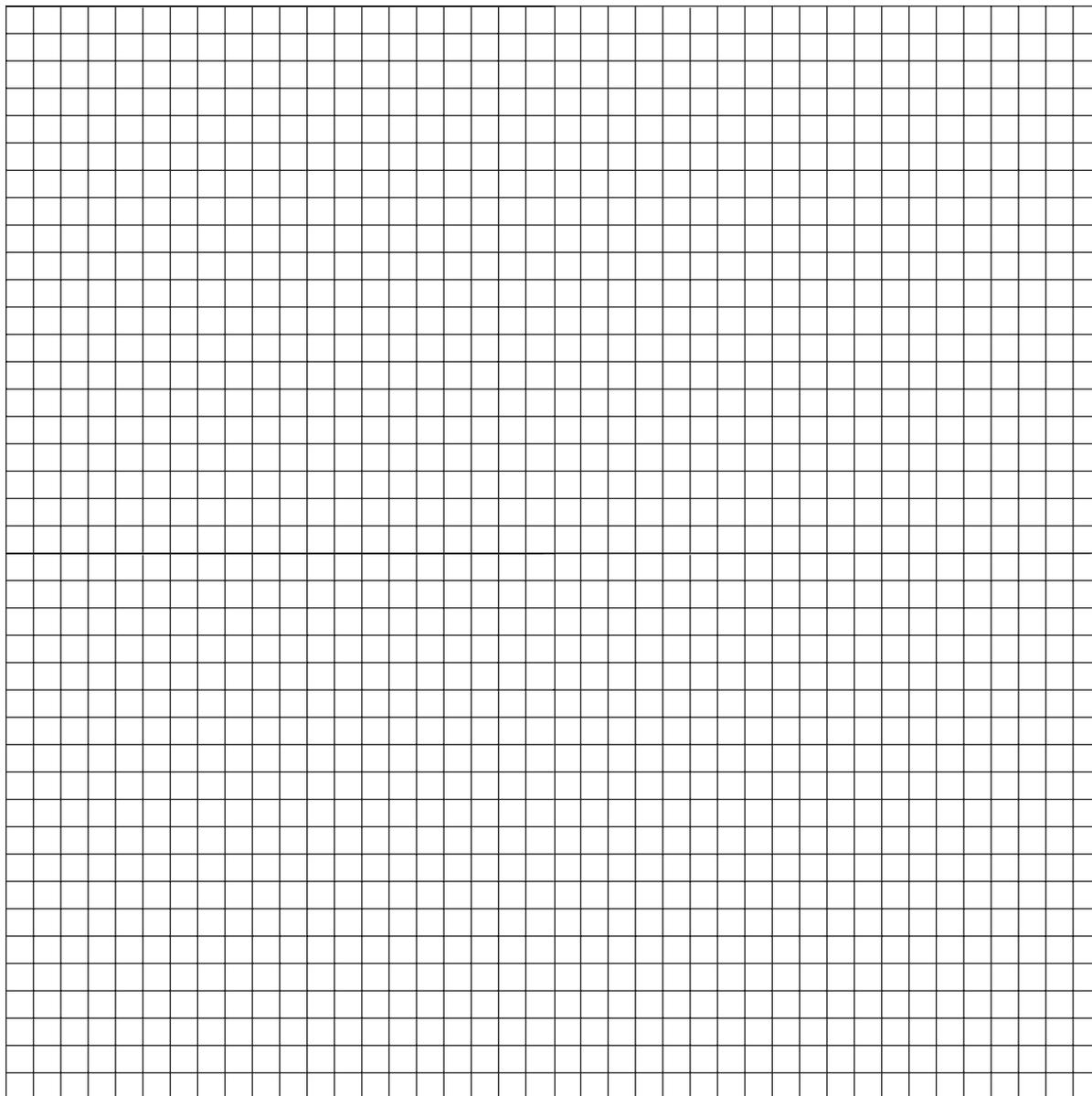
Scrap Graph Paper — This sheet will *not* be scored.
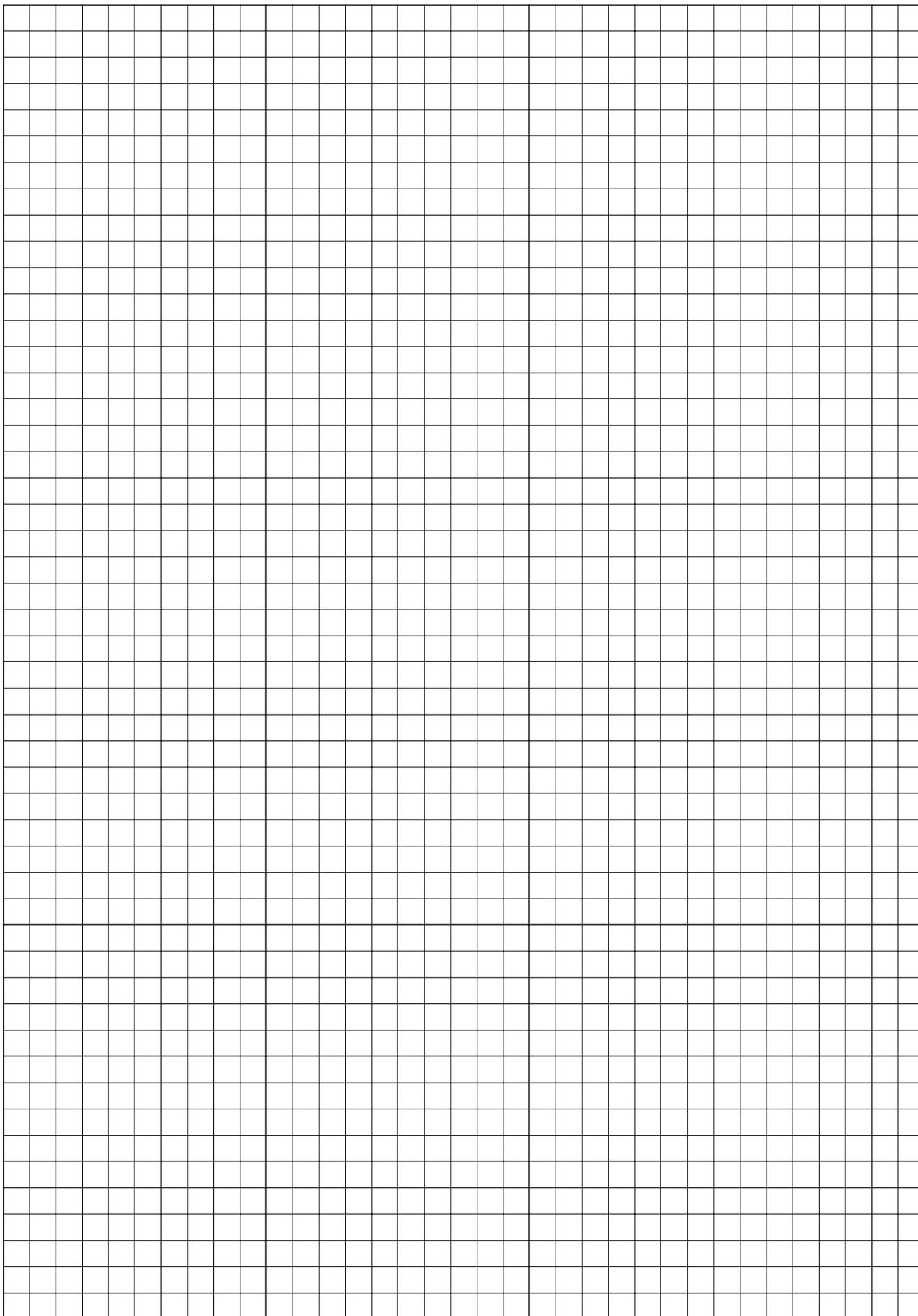
The University of the State of New York

Regents High School Examination

MATHEMATICS A

Tuesday, June 17, 2003 — 1:15 to 4:15 p.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 20 questions in this part.

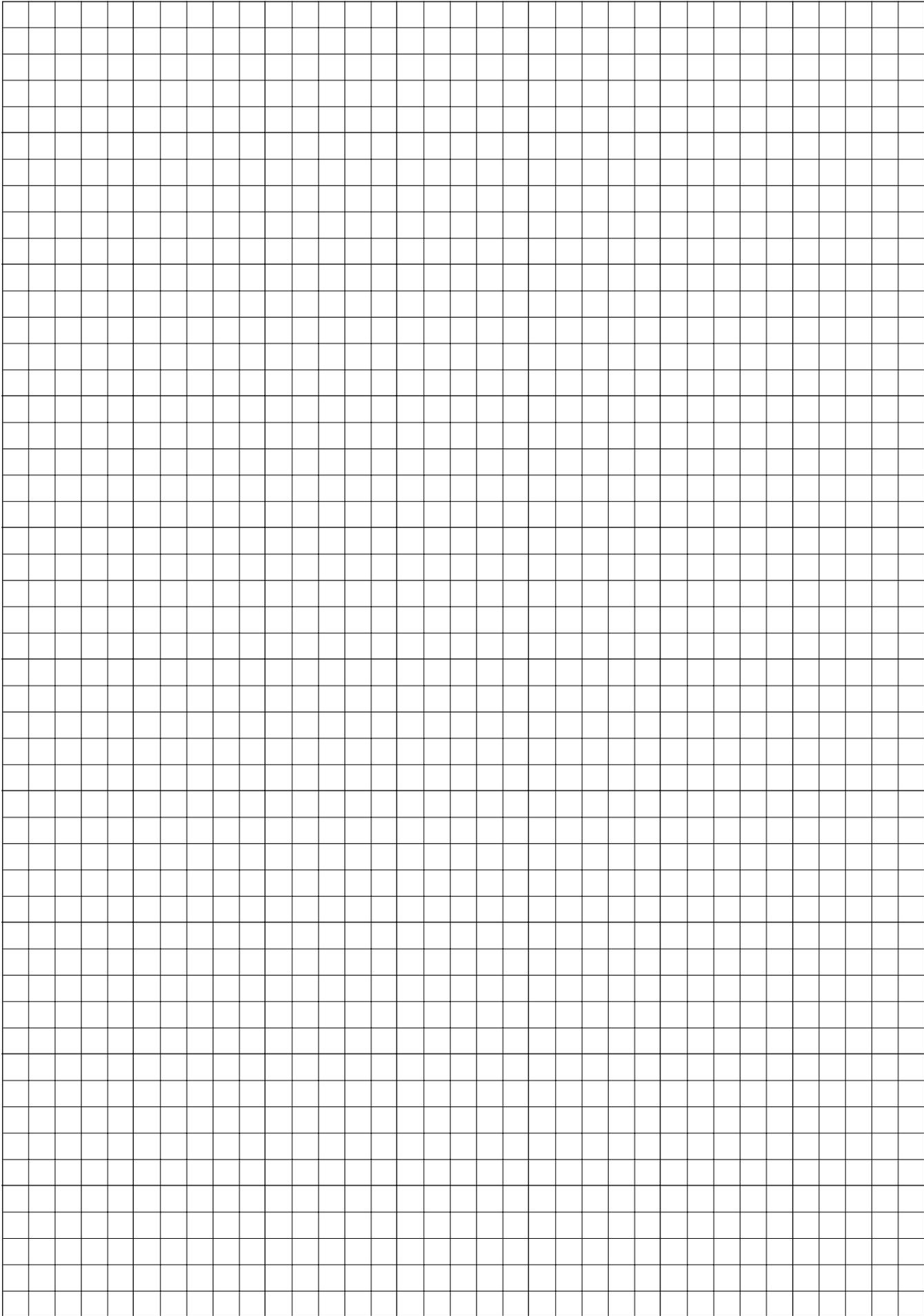|			
1	6	11	16 ....
2	7	12	17 ....
3	8	13	18 ....
4	9	14	19 ....
5	10	15	20 ....

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

MATHEMATICS A			
Question	Maximum Credit	Credits Earned	Rater's/Scorer's Initials
Part I 1–20	40		
Part II 21	2		
22	2		
23	2		
24	2		
25	2		
Part III 26	3		
27	3		
28	3		
29	3		
30	3		
Part IV 31	4		
32	4		
33	4		
34	4		
35	4		
Maximum Total	85		

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

Total Raw Score   **Checked by**   **Scaled Score**

Notes to raters. . .

- **Each paper should be scored by a minimum of three raters.**
- **The table for converting the total raw score to the scaled score is provided in the scoring key for this examination.**
- **The scaled score is the student's final examination score.**

FOR TEACHERS ONLY

MATHEMATICS A

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 printed at the end of this key. 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 40 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) 2	(6) 2	(11) 4	(16) 2
(2) 4	(7) 4	(12) 3	(17) 4
(3) 1	(8) 3	(13) 1	(18) 1
(4) 1	(9) 1	(14) 1 and 3	(19) 4
(5) 2	(10) 3	(15) 1	(20) 2

Part II

For each question, use the specific criteria to award a maximum of two credits.

(21)   **[2]** 77, and appropriate work is shown, such as (76 + 78) ÷ 2.

      [1] 76 and 78 are identified.

<div align="center">*or*</div>

      [1] 77, 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.

(22)   **[2]** 160, and appropriate work is shown, such as the proportion $\frac{25}{16} = \frac{250}{x}$.

      [1] Appropriate work is shown, but one computational error or one conceptual error is made, such as $\frac{5}{4} = \frac{250}{x}$.

<div align="center">*or*</div>

      [1] 160, 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.

(23)   **[2]** 2, and appropriate work is shown.

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

<div align="center">*or*</div>

      [1] 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.

(24) **[2]** 31, and appropriate work is shown, such as $5x + 25 = 180$.

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

or

[1] Appropriate work is shown, but one conceptual error is made, such as setting the given angles equal to each other.

or

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

or

[1] 31, 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.

(25) **[2]** A correct construction is drawn to find the midpoint of $\overline{BC}$, showing both sets of arcs and a line connecting *A* with the midpoint.

[1] A correct construction is drawn to find the midpoint of $\overline{BC}$, but the median is not drawn.

or

[1] The construction is appropriate, but a compass and a straightedge are not used.

[0] No construction arcs are shown.

or

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

Part III

For each question, use the specific criteria to award a maximum of three credits.

(26)   **[3]** Seth had 101, Jason had 51, and Raoul had 104, and appropriate work is shown, such as $x + 25 = (2x - 1) - 25$ 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] 101, 51, and 104, and appropriate work is shown, but the solutions are not labeled or are labeled incorrectly.

or

[2] A correct equation is solved, but the number of CDs for only one boy is found.

or

[2] The trial-and-error method is used to find a correct solution, but only two trials and appropriate checks are shown.

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

or

[1] Appropriate work is shown, but one conceptual error is made, but an appropriate number of CDs is found for each boy.

or

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

or

[1] Seth had 101, Jason had 51, and Raoul had 104, but no work or only one trial with an appropriate check is shown.

[0] Seth had 101 *or* Jason had 51 *or* Raoul had 104, but no work is shown.

or

[0] 101, 51, and 104, but no work is shown and the solutions are not labeled or are labeled incorrectly.

or

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

(27)   **[3]** 64, and appropriate work is shown, such as calculating $\frac{(36 \times 144)}{(9 \times 9)}$ or drawing a labeled diagram.

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

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

or

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

or

[1] 64, 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.

(28)   **[3]** 7,625 and 66.7%, and appropriate work is shown.

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

or

[2] Only the number of votes for candidate *B* is found correctly, but appropriate work is shown.

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

or

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

or

[1] The percent of votes cast for candidate *A* is found correctly, but no further correct work is shown.

or

[1] 7,625 and 66.7%, but no work is shown.

[0] 7,625 *or* 66.7%, 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.

(29) **[3]** Option 2 will yield 82,576,000 more possibilities, and appropriate work is shown, such as $26^3 \bullet 10^4$ and $_{26}P_4 \bullet {}_{10}P_3$.

[2] Appropriate work is shown, but one computational error is made, but the appropriate option is identified.

or

[2] The correct numbers of arrangements are found for both Option 1 and Option 2, but the question of which option will yield more arrangements is not answered or is answered incorrectly.

[1] Appropriate work is shown, but more than one computational error is made, but the appropriate option is identified.

or

[1] Appropriate work is shown, but one conceptual error is made, but the appropriate option is identified.

or

[1] Either Option 1 or Option 2 is found correctly, but no further correct work is shown.

or

[1] Option 2 will yield 82,576,000 more possibilities, but no work is shown.

[0] Option 2, but no work or inappropriate 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.

(30) **[3]** 6.7, and appropriate work is shown, such as using the distance formula.

[2] Appropriate work is shown, but one computational or rounding or graphing error is made or the answer is left in radical form.

[1] Appropriate work is shown, but more than one computational or rounding or graphing error is made.

or

[1] Only an appropriate diagram or graph is shown.

or

[1] The horizontal distance is determined to be 3, and the vertical distance is determined to be 6, but the shortest distance is not found.

or

[1] 6.7, 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.

[OVER]

Part IV

For each question, use the specific criteria to award a maximum of four credits.

(31)   **[4]** 11, and appropriate work is shown, such as solving the quadratic equation $3x(x + 5) = 150$ or trial and error with at least three trials and appropriate checks.

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

or

[3] Appropriate work is shown to determine that 5 is the shorter side of the box, but the shorter side of the original sheet is not found or is found incorrectly.

or

[3] An incorrect quadratic equation of equal difficulty is solved appropriately, and an appropriate shorter side of the original sheet is found.

[2] Appropriate work is shown, but more than one computational error is made.

or

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

or

[2] An incorrect quadratic equation of equal difficulty is solved appropriately, but the shorter side of the original sheet is not found.

or

[2] A correct quadratic equation is set equal to zero, but no further correct work is shown.

or

[2] The trial-and-error method is used to find a correct solution, but only two trials and appropriate checks are shown.

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

or

[1] One conceptual error is made in finding the shorter side of the box, and the corresponding shorter side of the original sheet is not found or is found incorrectly.

(31) continued

<center>***or***</center>

[1] A correct quadratic equation is written, but it is not set equal to zero, and no further correct work is shown.

<center>***or***</center>

[1] 11, 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.

(32)   **[4]** Two **X**s are indicated at the intersections of the angle bisector and the parallel lines in the correct sketch of the loci.

[3] All loci are drawn correctly, but no **X**s are drawn to indicate the locations, or only one **X** is drawn.

<center>***or***</center>

[3] The angle bisector is drawn correctly, but only one line is drawn parallel to the walkway, but an **X** is indicated appropriately.

[2] Only one correct locus is drawn, but **X**s indicate the two appropriate locations of the intersection of the loci.

[1] **X**s are drawn in the correct locations, but no loci are shown.

<center>***or***</center>

[1] Only one correct locus is drawn, and no **X**s are indicated.

<center>***or***</center>

[1] Both loci are drawn incorrectly, but **X**s are drawn on the appropriate points of intersection.

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

(33) **[4]** 100 and a correct parabolic arch is drawn, and appropriate work is shown, such as a table of values for the parabola or correctly labeled points.

[3] 100 and a correct parabolic arch is drawn, but no table of values or labeled points are shown.

or

[3] 100 and a correct parabolic arch is drawn, and appropriate work is shown, but no scale or an incorrect scale is shown.

or

[3] A correct parabolic arch is drawn, but the maximum height is missing or is incorrect.

[2] An incorrect parabolic arch is drawn, but an appropriate maximum height is found.

or

[2] A correct height is determined algebraically, but a parabolic arch is not drawn.

or

[2] 100 and an appropriate parabolic arch is drawn, but it is not drawn between $0 \leq x \leq 20$.

[1] A correct parabolic arch is drawn, but no work is shown, such as a table of values or correctly labeled points, and the maximum height is missing or is incorrect.

or

[1] 100, but no work is shown and no parabolic arch 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.

(34) **[4]** 9.4, and appropriate work is shown, such as the use of the Pythagorean theorem.

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

[2] Appropriate work is shown, but more than one computational or rounding error is made.

or

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

or

[2] An incorrect diagonal of the base is found, but an appropriate solution is found.

or

[2] Only the diagonal of the base is found correctly, but appropriate work is shown, such as $3^2 + 4^2 = d^2$ or use of 3–4–5 right triangles.

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

or

[1] The Pythagorean theorem is used to find the length of the straw, but the appropriate legs are not used.

or

[1] 9.4, but no work is shown.

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

(35) **[4]** $y = 2x - 40$, a correctly drawn graph with a slope of 2 and a y-intercept of –40, and 20, and appropriate work is shown.

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

or

[3] The equation and graph are correct, but the breakeven point is missing or is incorrect.

[2] Appropriate work is shown, but more than one computational or graphing error is made.

or

[2] An incorrect equation is written, but an appropriate graph is drawn, and an appropriate breakeven point is identified.

[1] An incorrect equation is written, but an appropriate graph is drawn, but the breakeven point is missing or is incorrect.

or

[1] A correct equation is written, but the graph is incorrect, and the breakeven point is not identified.

or

[1] $y = 2x - 40$ and 20, but no work is shown and no 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.

Map to Learning Standards

Key Ideas	Item Numbers
Mathematical Reasoning	8, 17
Number and Numeration	3, 6, 15, 19
Operations	1, 4, 12, 14, 16, 18, 28
Modeling/Multiple Representation	7, 9, 24, 25, 27, 32
Measurement	2, 21, 22, 30, 31, 34
Uncertainty	5, 20, 29
Patterns/Functions	10, 11, 13, 23, 26, 33, 35

Regents Examination in Mathematics A

June 2003

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

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. The school principal is responsible for assuring that the student's final examination score is based on a fair, accurate, and reliable scoring of the student's answer 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 in the scoring key 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.