The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS B

Friday, January 25, 2002 — 9:15 a.m. to 12:15 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 34 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. The formulas that you may need to answer some questions in this examination are found on page 2.

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, 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.

Formulas

Area of Triangle

$K = \frac{1}{2}ab \sin C$

Functions of the Sum of Two Angles

$\sin (A + B) = \sin A \cos B + \cos A \sin B$

$\cos (A + B) = \cos A \cos B - \sin A \sin B$

Functions of the Difference of Two Angles

$\sin (A - B) = \sin A \cos B - \cos A \sin B$

$\cos (A - B) = \cos A \cos B + \sin A \sin B$

Law of Sines

$\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$

Law of Cosines

$a^2 = b^2 + c^2 - 2bc \cos A$

Functions of the Double Angle

$\sin 2A = 2 \sin A \cos A$

$\cos 2A = \cos^2 A - \sin^2 A$

$\cos 2A = 2 \cos^2 A - 1$

$\cos 2A = 1 - 2 \sin^2 A$

Functions of the Half Angle

$\sin \frac{1}{2}A = \pm \sqrt{\dfrac{1 - \cos A}{2}}$

$\cos \frac{1}{2}A = \pm \sqrt{\dfrac{1 + \cos A}{2}}$

Normal Curve

Standard Deviation

Part I

Answer all questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. Record your answers in the spaces provided on the separate answer sheet. [40]

1 The roots of a quadratic equation are real, rational, and equal when the discriminant is

(1) –2

(2) 2

(3) 0

(4) 4

2 Chad had a garden that was in the shape of a rectangle. Its length was twice its width. He decided to make a new garden that was 2 feet longer and 2 feet wider than his first garden. If x represents the original width of the garden, which expression represents the difference between the area of his new garden and the area of the original garden?

(1) $6x + 4$

(2) $2x^2$

(3) $x^2 + 3x + 2$

(4) 8

3 The accompanying graph represents the value of a bond over time.

Value of Bond

Which type of function does this graph best model?

(1) trigonometric

(2) logarithmic

(3) quadratic

(4) exponential

4 An object that weighs 2 pounds is suspended in a liquid. When the object is depressed 3 feet from its equilibrium point, it will oscillate according to the formula $x = 3 \cos (8t)$, where t is the number of seconds after the object is released. How many seconds are in the period of oscillation?

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

(2) π (4) 2π

5 If θ is an angle in standard position and its terminal side passes through the point $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$ on a unit circle, a possible value of θ is

(1) 30°   (3) 120°
(2) 60°   (4) 150°

6 The expression $\dfrac{\frac{a}{b} - \frac{b}{a}}{\frac{1}{a} + \frac{1}{b}}$ is equivalent to

(1) $a + b$ (3) ab

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

7 If $f(x) = 5x^2$ and $g(x) = \sqrt{2x}$, what is the value of $(f \circ g)(8)$?

(1) $8\sqrt{10}$ (3) 80
(2) 16   (4) 1,280

8 Which expression is *not* equivalent to $\log_b 36$?

(1) $6 \log_b 2$ (3) $2 \log_b 6$
(2) $\log_b 9 + \log_b 4$ (4) $\log_b 72 - \log_b 2$

9 If a function is defined by the equation $y = 3x + 2$, which equation defines the inverse of this function?

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

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

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

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

10 Which transformation is *not* an isometry?

(1) $r_{y=x}$

(3) $T_{3,6}$

(2) $R_{0,90°}$

(4) D_2

11 Which relation is a function?

(1) $x = 4$

(3) $y = \sin x$

(2) $x = y^2 + 1$

(4) $x^2 + y^2 = 16$

12 In $\triangle ABC$, m$\angle A = 33$, $a = 12$, and $b = 15$. What is m$\angle B$ to the *nearest degree*?

(1) 41

(3) 44

(2) 43

(4) 48

13 The accompanying diagram represents circular pond O with docks located at points A and B. From a cabin located at C, two sightings are taken that determine an angle of 30° for tangents $\overrightarrow{CA}$ and $\overrightarrow{CB}$.
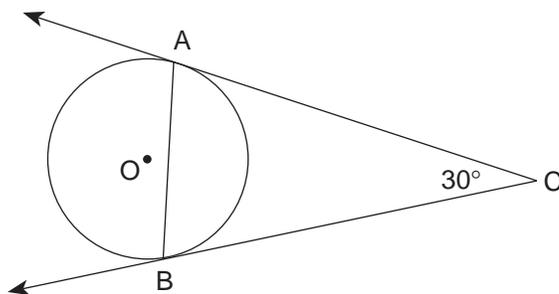
What is m$\angle CAB$?

(1) 30

(3) 75

(2) 60

(4) 150

14 The accompanying diagram shows a section of a sound wave as displayed on an oscilloscope.
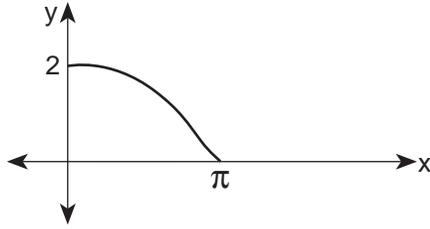
Which equation could represent this graph?

(1) $y = 2 \cos \frac{x}{2}$

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

(2) $y = 2 \sin \frac{x}{2}$

(4) $y = \frac{1}{2} \sin \frac{\pi}{2}x$

15 Every time the pedals go through a 360° rotation on a certain bicycle, the tires rotate three times. If the tires are 24 inches in diameter, what is the minimum number of complete rotations of the pedals needed for the bicycle to travel at least 1 mile?

(1) 12

(3) 561

(2) 281

(4) 5,280

16 Which type of symmetry does the equation $y = \cos x$ have?

(1) line symmetry with respect to the x-axis

(2) line symmetry with respect to $y = x$

(3) point symmetry with respect to the origin

(4) point symmetry with respect to $\left(\frac{\pi}{2}, 0\right)$

17 The value of $\left(\dfrac{3^0}{27^{\frac{2}{3}}}\right)^{-1}$ is

(1) –9

(3) $-\frac{1}{9}$

(2) 9

(4) $\frac{1}{9}$

18 What is the domain of $h(x) = \sqrt{x^2 - 4x - 5}$?

(1) $\{x | x \geq 1 \text{ or } x \leq -5\}$ (3) $\{x | -1 \leq x \leq 5\}$

(2) $\{x | x \geq 5 \text{ or } x \leq -1\}$ (4) $\{x | -5 \leq x \leq 1\}$

19 The expression $(-1 + i)^3$ is equivalent to

(1) $-3i$ (3) $-1 - i$

(2) $-2 - 2i$ (4) $2 + 2i$

20 The revenue, $R(x)$, from selling x units of a product is represented by the equation $R(x) = 35x$, while the total cost, $C(x)$, of making x units of the product is represented by the equation $C(x) = 20x + 500$. The total profit, $P(x)$, is represented by the equation $P(x) = R(x) - C(x)$. For the values of $R(x)$ and $C(x)$ given above, what is $P(x)$?

(1) $15x$ (3) $15x - 500$

(2) $15x + 500$ (4) $10x + 100$

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.   [12]

21 Explain how a person can determine if a set of data represents inverse variation and give an example using a table of values.

22 Solve for x in simplest $a + bi$ form: $x^2 + 8x + 25 = 0$

23 A ball is rolling in a circular path that has a radius of 10 inches, as shown in the accompanying diagram. What distance has the ball rolled when the subtended arc is 54°? Express your answer to the *nearest hundredth of an inch.*

54°

10 in
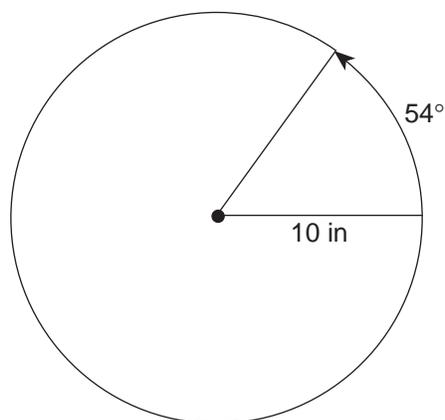
24 A rectangle is said to have a golden ratio when $\dfrac{w}{h} = \dfrac{h}{w - h}$, where w represents width and h represents height. When $w = 3$, between which two consecutive integers will h lie?

25 The accompanying diagram shows the floor plan for a kitchen. The owners plan to carpet all of the kitchen except the "work space," which is represented by scalene triangle *ABC*. Find the area of this work space to the *nearest tenth of a square foot*.
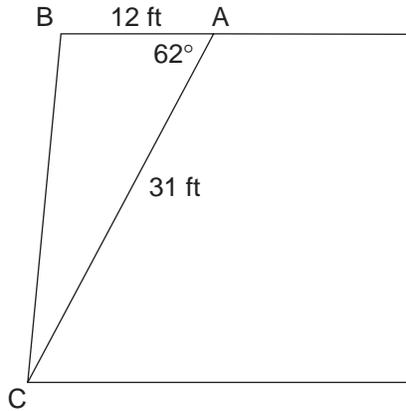
26 A set of normally distributed student test scores has a mean of 80 and a standard deviation of 4. Determine the probability that a randomly selected score will be between 74 and 82.

Part III

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. [24]

27 Two straight roads, Elm Street and Pine Street, intersect creating a 40° angle, as shown in the accompanying diagram. John's house (*J*) is on Elm Street and is 3.2 miles from the point of intersection. Mary's house (*M*) is on Pine Street and is 5.6 miles from the intersection. Find, to the *nearest tenth of a mile,* the direct distance between the two houses.
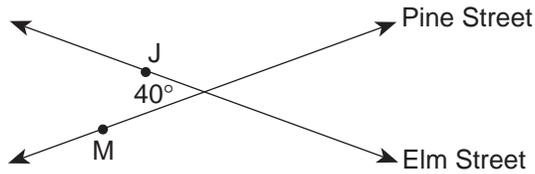
28 At the local video rental store, José rents two movies and three games for a total of $15.50. At the same time, Meg rents three movies and one game for a total of $12.05. How much money is needed to rent a combination of one game and one movie?

29 Team *A* and team *B* are playing in a league. They will play each other five times. If the probability that team *A* wins a game is $\frac{1}{3}$, what is the probability that team *A* will win *at least* three of the five games?

30 Depreciation (the decline in cash value) on a car can be determined by the formula $V = C(1 - r)^t$, where *V* is the value of the car after *t* years, *C* is the original cost, and *r* is the rate of depreciation. If a car's cost, when new, is $15,000, the rate of depreciation is 30%, and the value of the car now is $3,000, how old is the car to the *nearest tenth of a year*?

31 When a baseball is hit by a batter, the height of the ball, $h(t)$, at time t, $t \geq 0$, is determined by the equation $h(t) = -16t^2 + 64t + 4$. For which interval of time is the height of the ball greater than or equal to 52 feet?

32 *a* On the accompanying grid, graph the equation $2y = 2x^2 - 4$ in the interval $-3 \le x \le 3$ and label it *a*.

   b On the same grid, sketch the image of *a* under $T_{5,-2} \circ r_{x\text{-axis}}$ and label it *b*.
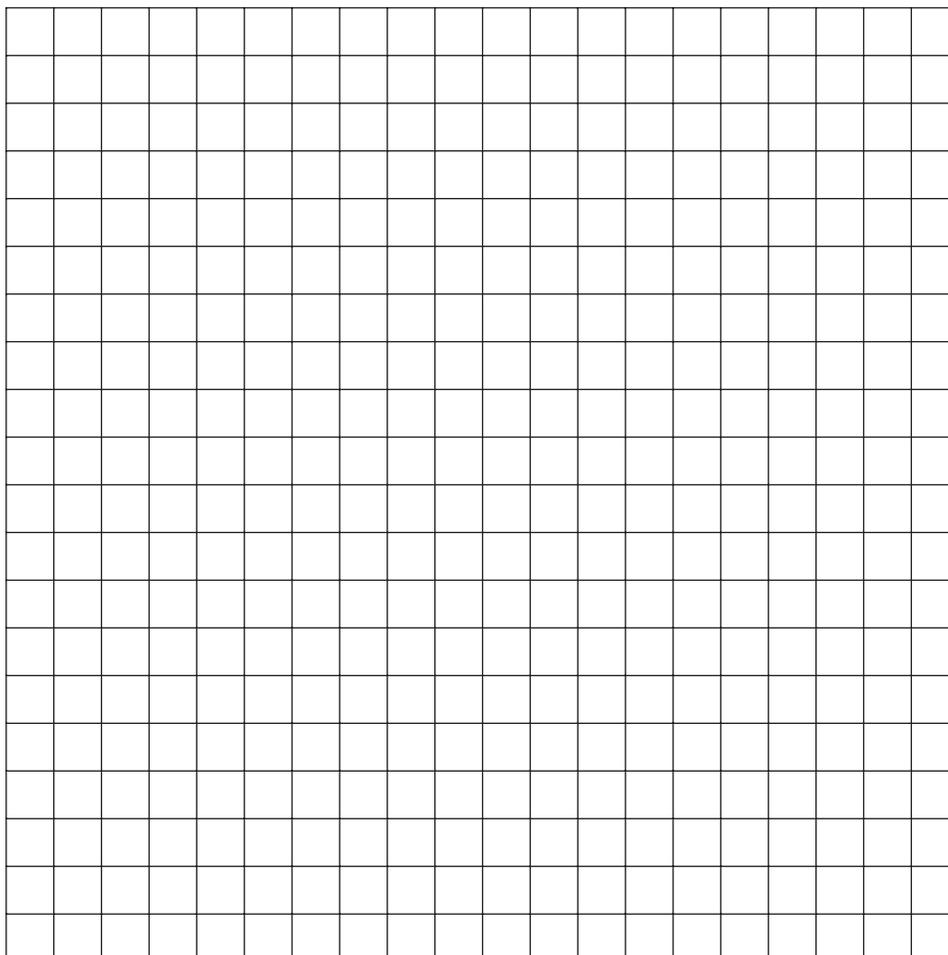
Part IV

Answer all questions in this part. Each correct answer will receive 6 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. [12]

33 Prove that the diagonals of a parallelogram bisect each other.

34 Two different tests were designed to measure understanding of a topic. The two tests were given to ten students with the following results:

Test x	75	78	88	92	95	67	58	72	74	81
Test y	81	73	85	88	89	73	66	75	70	78

Construct a scatter plot for these scores, and then write an equation for the line of best fit (round slope and intercept to the *nearest hundredth*).
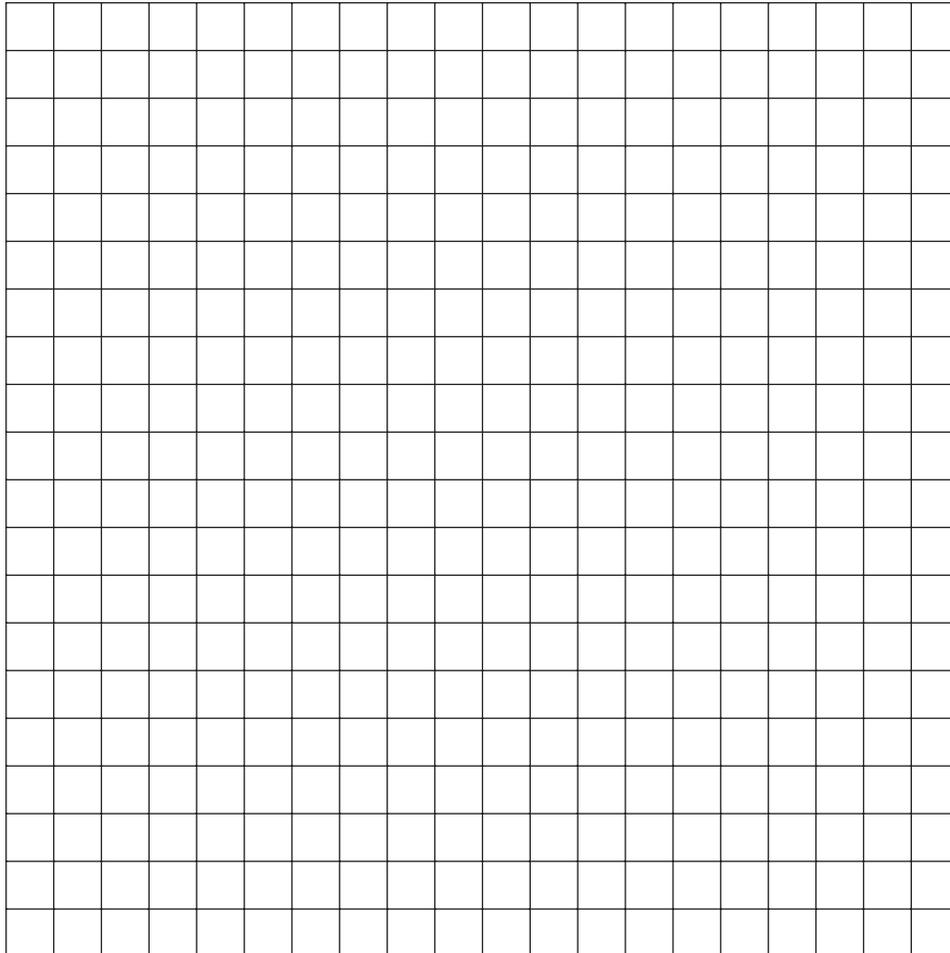
Find the correlation coefficient.

Predict the score, to the *nearest integer,* on test y for a student who scored 87 on test x.
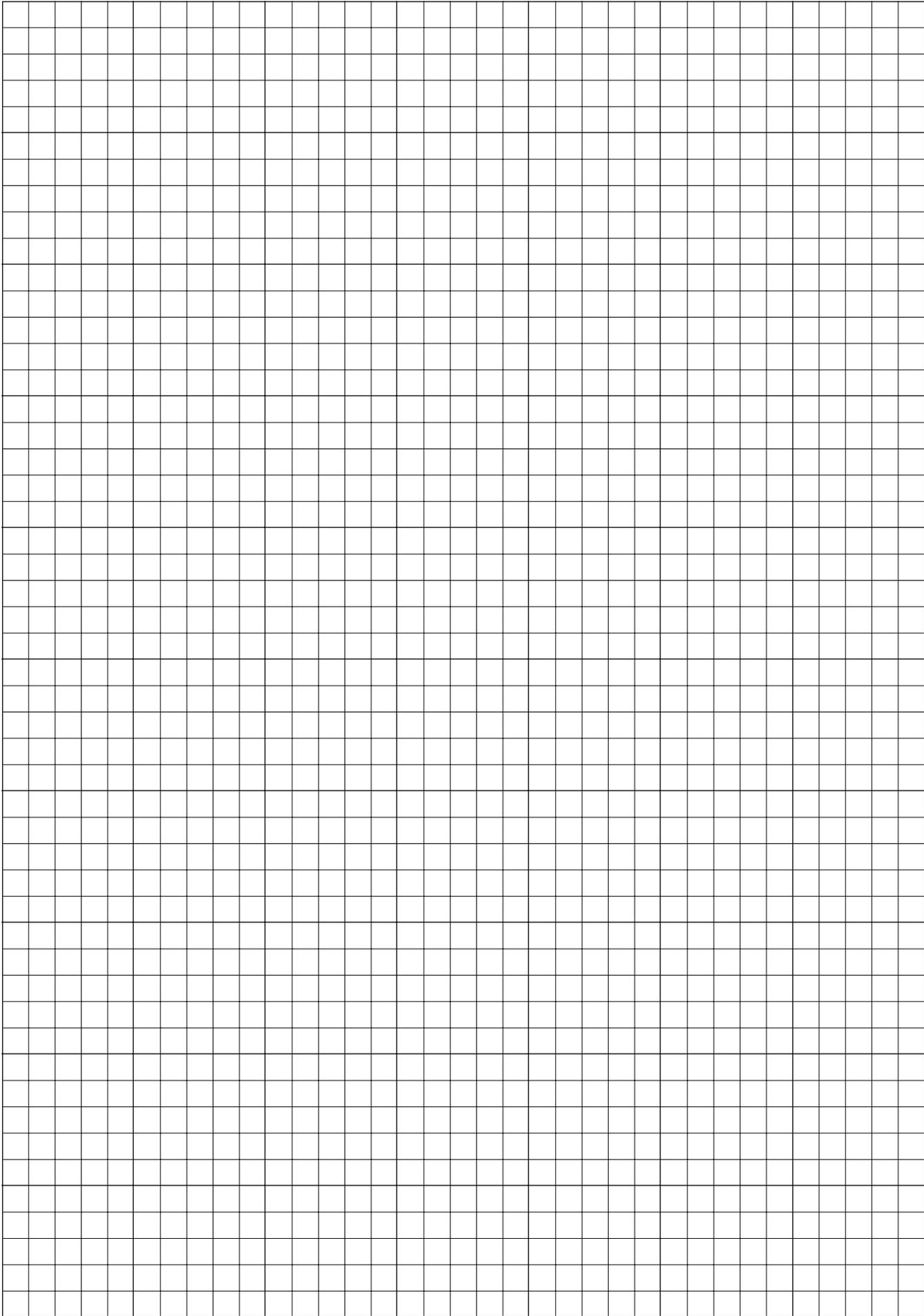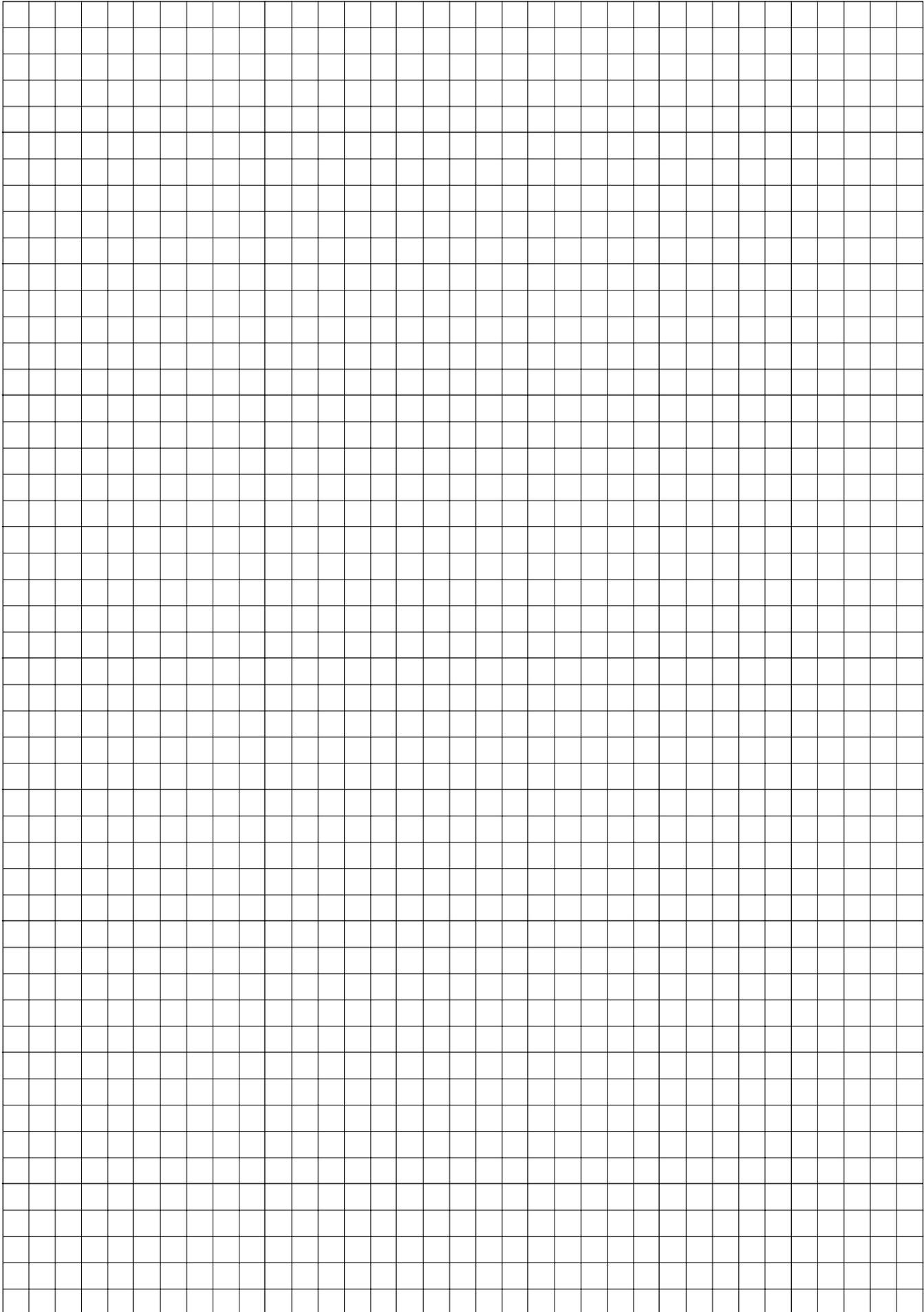
The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS B

Friday, January 25, 2002 — 9:15 a.m. to 12:15 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 B			
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		
26	2		
Part III 27	4		
28	4		
29	4		
30	4		
31	4		
32	4		
Part IV 33	6		
34	6		
Maximum Total	88		

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

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS B

Friday, January 25, 2002 — 9:15 a.m. to 12:15 p.m., only

SCORING KEY

Mechanics of Rating

The following procedures are to be followed for scoring student answer papers for the Mathematics B 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) 3	(6) 2	(11) 3	(16) 4
(2) 1	(7) 3	(12) 2	(17) 2
(3) 4	(8) 1	(13) 3	(18) 2
(4) 1	(9) 3	(14) 1	(19) 4
(5) 2	(10) 4	(15) 2	(20) 3

[1] [OVER]

Part II

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

(21)   **[2]** An explanation is given that indicates that a set of data can represent inverse variation if the product of two variables is constant, and a correct table of values is shown.

[1] The rule for direct rather than inverse variation is stated, but an appropriate equation and table of values are shown.

or

[1] An example of inverse variation is shown, but no explanation of why it is an inverse variation is given.

or

[1] An explanation is given that indicates that a set of data can represent inverse variation, but no table of values 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]** $-4 \pm 3i$, and appropriate work is shown.

[1] The quadratic formula is used correctly, but one computational error is made.

or

[1] $\frac{-8 \pm 6i}{2}$, but appropriate work is shown.

or

[1] $-4 \pm 3i$, 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]** 9.42, and appropriate work is shown, such as changing the angle to radians and finding *s*.

       [1] The formula *s* = θ*r* is stated, but 54° is not converted to radian measure.

                                         or

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

                                         or

       [1] 9.42, 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]** 1 and 2, 1 < *x* < 2, or 1 < 1.854 < 2, and appropriate work is shown.

       [1] $\dfrac{3}{h} = \dfrac{h}{3-h}$ is shown, but one computational error is made.

                                         or

       [1] The positive root, 1.854, is obtained from the quadratic, but the two correct consecutive integers are not stated.

                                         or

       [1] 1 and 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.

(25)   **[2]** 164.2, and appropriate work is shown.

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

                                         or

       [1] 164.2, 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.

[OVER]

(26) **[2]** 0.624 or 62.4%, and appropriate work is shown.

[1] The correct standard deviations of −1.5 and +0.5 are found, but an incorrect probability is calculated.

or

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

or

[1] 0.624 or 62.4%, 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.

Part III

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

(27)   **[4]** 3.8, and the Law of Cosines is used.

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

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

or

[2] The Law of Cosines is shown, but sine is used instead of cosine, such as $x^2 = 3.2^2 + 5.6^2 - 2(3.2)(5.6)(\sin 40)$, but an appropriate answer is determined, based on that error.

[1] Substitution into the Law of Cosines is used, but no further work is shown.

or

[1] 3.8, 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)   **[4]** $6.15, and appropriate work is shown, such as solving simultaneous equations or using a trial-and-error method.

[3] $2.95 (movie) and $3.20 (game) are found, but they are not added.

or

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

[2] The system of equations is set up correctly, but one conceptual error leads to an appropriate solution.

or

[2] $2.95 (movie) or $3.20 (game), and appropriate work is shown.

[1] $6.15, 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.

(29) **[4]** $\frac{51}{243}$, and appropriate work is shown.

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

  [2] Appropriate work is shown, but the probabilities for the teams are switched.

  or

  [2] Correct substitution is made, but no further work is shown.

  or

  [2] Correct substitution is made, but an incorrect mathematical operation is used, such as multiplication instead of addition.

  or

  [2] The probability for "at most three" or "more than 3" is found, but appropriate work is shown.

  [1] $\frac{40}{243}$, and exactly three games are shown.

  or

  [1] $\frac{51}{243}$, 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.

(30) **[4]** 4.5, and appropriate work is shown, such as using logs to solve the equation $0.2 = 0.7^t$.

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

  [2] Substitution with $r = 30$ is shown and the log of both sides is determined, but the domain error is not recognized, such as $\log 0.2 = t \log (-29)$.

  or

  [2] The order of operations is used incorrectly and an exponential function is maintained, but t is solved for appropriately, using logs.

  [1] Substitution with $r = 0.3$ is shown, resulting in $0.2 = 0.7^t$, but no further work is shown.

  or

  [1] 4.5, 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.

[6]

(31)   **[4]** $1 \le t \le 3$, and appropriate work is shown, such as $-16t^2 + 64t + 4 \ge 52$.

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

or

[3] An incorrect inequality is written, but the resulting quadratic inequality is solved appropriately.

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

or

[2] The quadratic equation $-16t^2 + 64t + 4 = 52$ is solved appropriately, and both solutions are found.

[1] An incorrect quadratic equation of equal difficulty is solved appropriately, but one computational error is made.

or

[1] $1 \le t \le 3$, 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.

(32)   *a*   **[2]** The equation $2y = 2x^2 - 4$ is graphed correctly over the required interval and labeled.

[1] An appropriate graph is shown, but less than the required interval is drawn.

or

[1] An appropriate graph is shown, but one coordinate is calculated incorrectly.

b   **[2]** A correct composition of transformations of the graph drawn in part *a* is sketched and labeled.

[1] Only one of the transformations is correct.

or

[1] The composition of transformations is correct, but done in reverse order.

a and *b*

[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 six credits.

(33)   **[6]** Either a correct Euclidean proof is written, with a concluding statement that the diagonals bisect each other, or a correct analytic proof using coordinate geometry is written, with a concluding statement that the diagonals bisect each other.

[5] One reason is omitted or incorrect.

or

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

[4] The appropriate triangles are proven to be congruent, but the corresponding parts and a final statement that indicates why the diagonals are bisected are omitted.

or

[4] Appropriate work is shown, but two computational errors are made.

or

[4] A correct analytic proof using coordinate geometry is written, but no concluding statement is made.

[3] An appropriate conclusion is drawn, including a statement that indicates why the diagonals are bisected; but only a partial proof is written, with two steps missing, and errors in the statements or reasons are made.

or

[3] An analytic proof using coordinate geometry with more than two errors is written, but an appropriate concluding statement is made.

or

[3] The diagram in an analytic proof is labeled incorrectly or numerically, but the rest of the proof is correct.

[2] Statements for the Euclidean proof are written, but no valid reasons are given.

or

[2] A congruence proof is written with some valid statements and reasons, but a concluding statement that the diagonals bisect each other is not made.

[1] A correctly labeled diagram for a Euclidean proof is shown, but no proof is written.

or

[1] An analytic proof using coordinate geometry with more than two errors is written, but no concluding statement is made.

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

(34) **[6]** A correct scatter plot, $y = 0.62x + 29.18$, $r = 0.92$, and 83; and appropriate work is shown.

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

or

[5] A correct scatter plot, equation, and score are shown, but no r-value is found.

[4] A correct scatter plot and equation are shown, but the r-value and score are missing or incorrect.

or

[4] An incorrect equation is shown, but all further work is appropriate.

or

[4] The scatter plot is missing or incorrect, but all further work is appropriate.

[3] The scatter plot is incorrect, but a correct equation and either a correct r-value or score are found.

or

[3] The scatter plot is correct, but an incorrect equation and either an appropriate r-value or score based on the incorrect equation are found.

[2] Only a correct scatter plot is shown, and all further work is missing or incorrect.

or

[2] Only a correct equation is shown, and all further work is missing or incorrect.

[1] An incorrect equation is shown, but an appropriate score is found.

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

Regents Examination in Mathematics B

January 2002

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

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 B examination.