The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS A

Monday, January 27, 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.

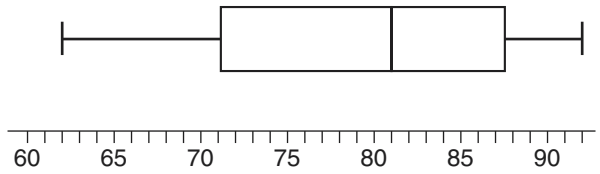
DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN.

Part I

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

Use this space for computations.

1 The accompanying diagram shows a box-and-whisker plot of student test scores on last year's Mathematics A midterm examination.



What is the median score?

(1) 62
(2) 71
(3) 81
(4) 92

2 Triangle $A'B'C'$ is the image of $\triangle ABC$ under a dilation such that $A'B' = 3AB$. Triangles ABC and $A'B'C'$ are

(1) congruent but not similar
(2) similar but not congruent
(3) both congruent and similar
(4) neither congruent nor similar

3 What is the inverse of the statement "If Mike did his homework, then he will pass this test"?

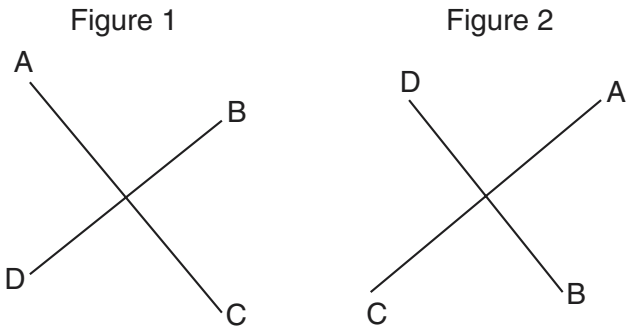
(1) If Mike passes this test, then he did his homework.
(2) If Mike does not pass this test, then he did not do his homework.
(3) If Mike does not pass this test, then he only did half his homework.
(4) If Mike did not do his homework, then he will not pass this test.

4 In which list are the numbers in order from least to greatest?

(1) $3.2,\ \pi,\ 3\frac{1}{3},\ \sqrt{3}$
(2) $\sqrt{3},\ 3.2,\ \pi,\ 3\frac{1}{3}$
(3) $\sqrt{3},\ \pi,\ 3.2,\ 3\frac{1}{3}$
(4) $3.2,\ 3\frac{1}{3},\ \sqrt{3},\ \pi$

5 The accompanying diagram shows a transformation.

Use this space for computations.



Which transformation performed on figure 1 resulted in figure 2?

(1) rotation
(2) reflection
(3) dilation
(4) translation

6 The product of $3x^5$ and $2x^4$ is

(1) $5x^9$
(2) $5x^{20}$
(3) $6x^9$
(4) $6x^{20}$

7 There are 12 people on a basketball team, and the coach needs to choose 5 to put into a game. How many different possible ways can the coach choose a team of 5 if each person has an equal chance of being selected?

(1) ${}_{12}P_5$
(2) ${}_5P_{12}$
(3) ${}_{12}C_5$
(4) ${}_5C_{12}$

8 Given the true statement: "If a person is eligible to vote, then that person is a citizen."

Which statement must also be true?

(1) Kayla is not a citizen; therefore, she is not eligible to vote.
(2) Juan is a citizen; therefore, he is eligible to vote.
(3) Marie is not eligible to vote; therefore, she is not a citizen.
(4) Morgan has never voted; therefore, he is not a citizen.

9 Line P and line C lie on a coordinate plane and have equal slopes. Neither line crosses the second or third quadrant. Lines P and C must

(1) form an angle of 45°
(2) be perpendicular
(3) be horizontal
(4) be vertical

Use this space for computations.

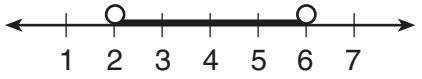
10 The equation $P = 2L + 2W$ is equivalent to

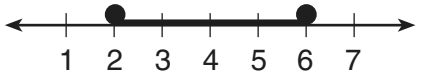
(1) $L = \frac{P - 2W}{2}$
(2) $L = \frac{P + 2W}{2}$
(3) $2L = \frac{P}{2W}$
(4) $L = P - W$

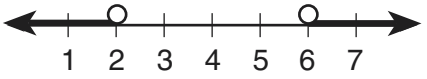
11 The sum of $\sqrt{75}$ and $\sqrt{3}$ is

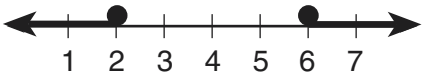
(1) 15
(2) 18
(3) $6\sqrt{3}$
(4) $\sqrt{78}$

12 Which graph represents the solution set for $2x - 4 \leq 8$ and $x + 5 \geq 7$?

(1)


(2)


(3)


(4)


13 If the measure of an angle is represented by $2x$, which expression represents the measure of its complement?

(1) $180 - 2x$
(2) $90 - 2x$
(3) $90 + 2x$
(4) $88x$

Use this space for computations.

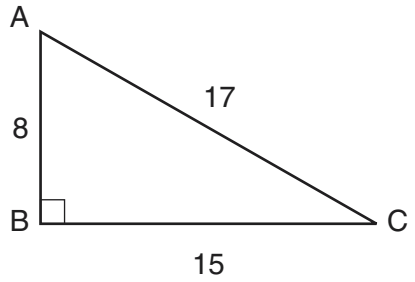
14 Which equation illustrates the multiplicative identity element?

(1) $x + 0 = x$
(2) $x - x = 0$
(3) $x \bullet \frac{1}{x} = 1$
(4) $x \bullet 1 = x$

15 The ages of five children in a family are 3, 3, 5, 8, and 18. Which statement is true for this group of data?

(1) mode > mean
(2) mean > median
(3) median = mode
(4) median > mean

16 In the accompanying diagram of right triangle ABC, $AB = 8$, $BC = 15$, $AC = 17$, and $m\angle ABC = 90$.



What is tan $\angle C$?

(1) $\frac{8}{15}$
(2) $\frac{17}{15}$
(3) $\frac{8}{17}$
(4) $\frac{15}{17}$

17 The locus of points equidistant from two sides of an acute scalene triangle is

(1) an angle bisector
(2) an altitude
(3) a median
(4) the third side

Use this space for computations.

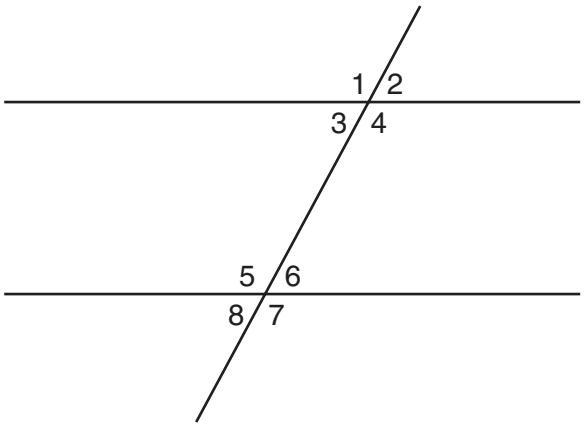
18 What are the factors of $x^2 - 10x - 24$?

(1) $(x - 4)(x + 6)$
(2) $(x - 4)(x - 6)$
(3) $(x - 12)(x + 2)$
(4) $(x + 12)(x - 2)$

19 What is the value of $\frac{6.3 \times 10^8}{3 \times 10^4}$ in scientific notation?

(1) 2.1×10^{-2}
(2) 2.1×10^2
(3) 2.1×10^{-4}
(4) 2.1×10^4

20 In the accompanying figure, what is one pair of alternate interior angles?



(1) $\angle 1$ and $\angle 2$
(2) $\angle 4$ and $\angle 5$
(3) $\angle 4$ and $\angle 6$
(4) $\angle 6$ and $\angle 8$

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 If Laquisha can enter school by any one of three doors and the school has two staircases to the second floor, in how many different ways can Laquisha reach a room on the second floor? Justify your answer by drawing a tree diagram or listing a sample space.

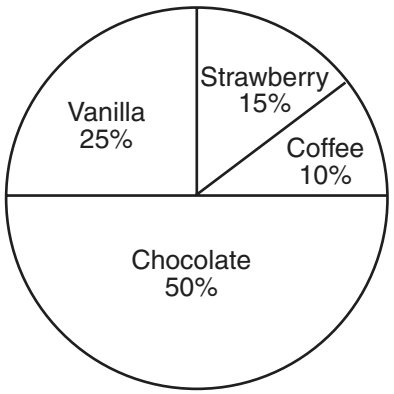
22 The world population was 4.2 billion people in 1982. The population in 1999 reached 6 billion. Find the percent of change from 1982 to 1999.

23 Six members of a school's varsity tennis team will march in a parade. How many different ways can the players be lined up if Angela, the team captain, is always at the front of the line?

24 A fish tank with a rectangular base has a volume of 3,360 cubic inches. The length and width of the tank are 14 inches and 12 inches, respectively. Find the height, in inches, of the tank.

25 Mr. Smith's class voted on their favorite ice cream flavors, and the results are shown in the accompanying diagram. If there are 20 students in Mr. Smith's class, how many students chose coffee ice cream as their favorite flavor?

Favorite Ice Cream Flavors



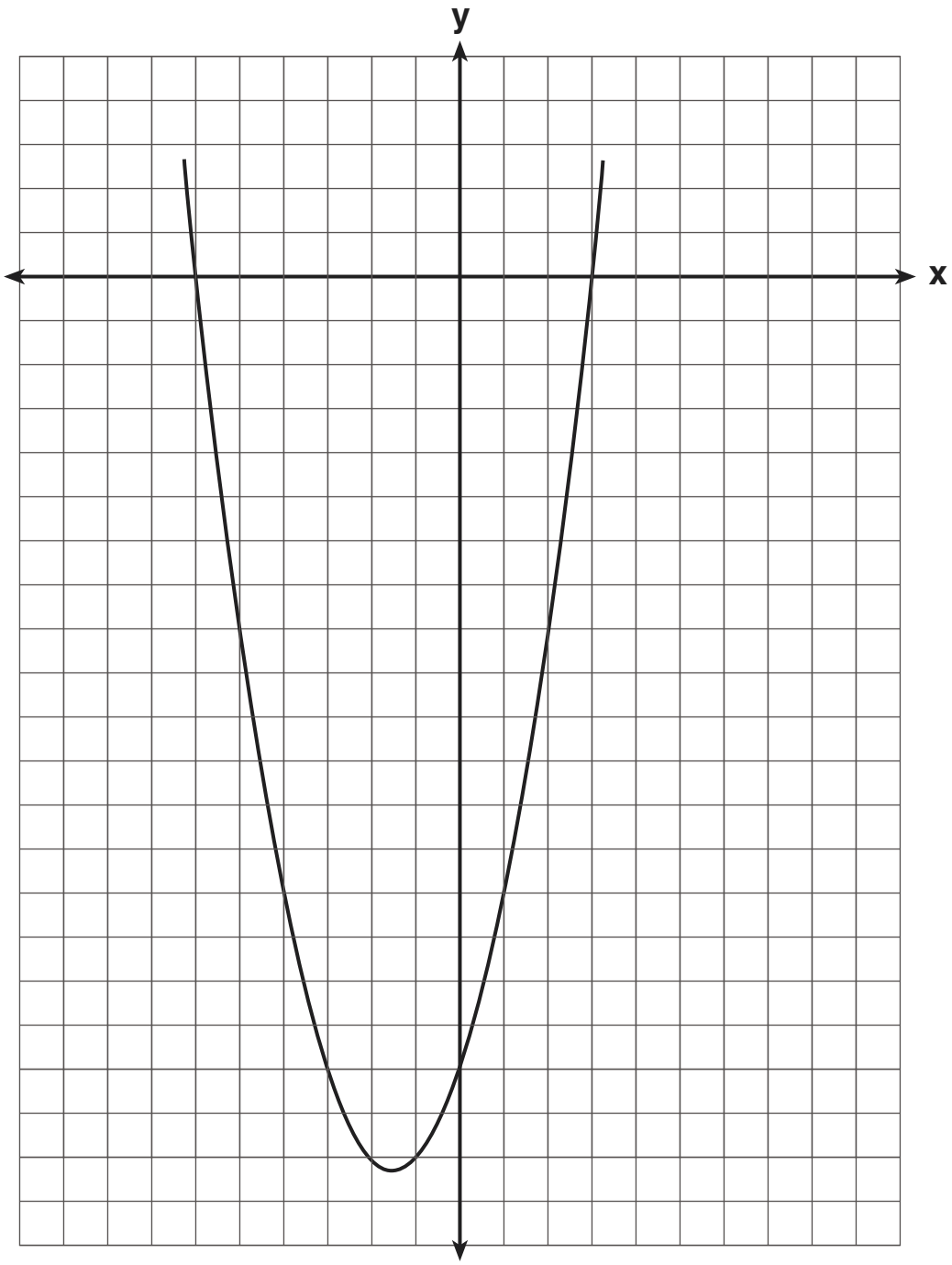
Part III

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 Three brothers have ages that are consecutive even integers. The product of the first and third boys' ages is 20 more than twice the second boy's age. Find the age of *each* of the three boys.

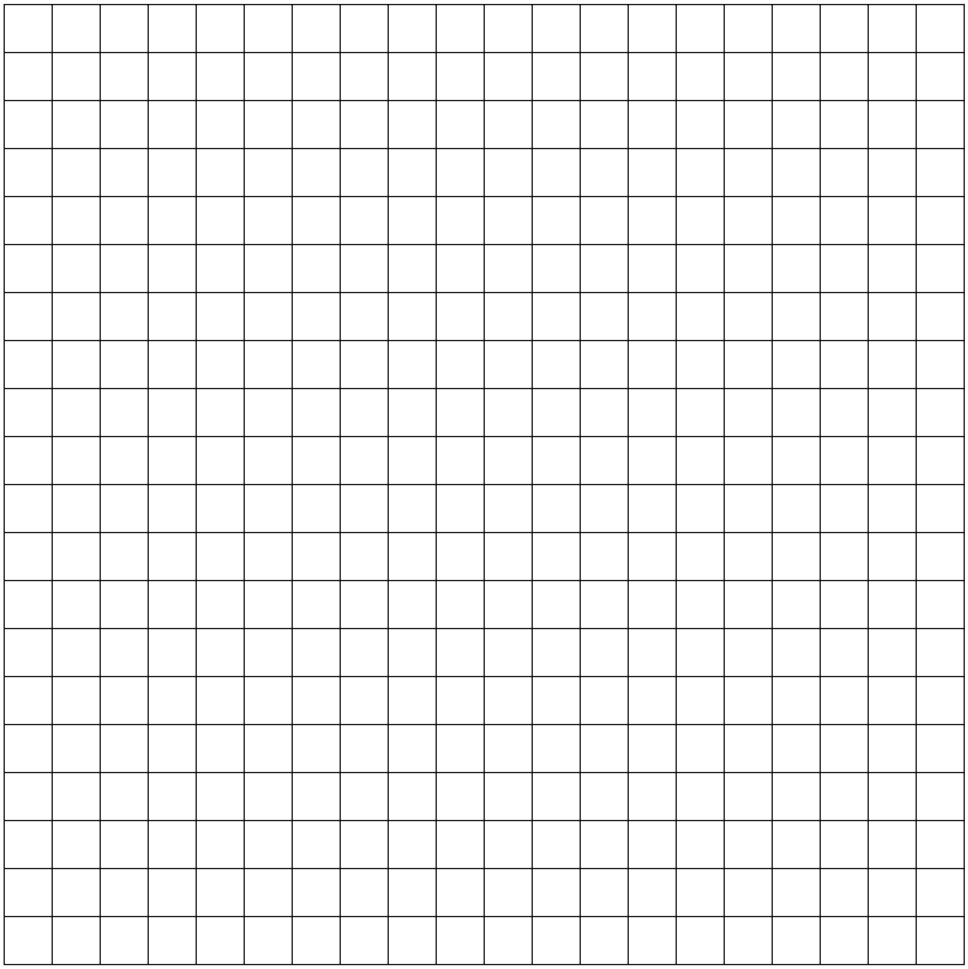
27 Arielle has a collection of grasshoppers and crickets. She has 561 insects in all. The number of grasshoppers is twice the number of crickets. Find the number of *each* type of insect that she has.

28 The graph of a quadratic equation is shown in the accompanying diagram. The scale on the axes is a unit scale. Write an equation of this graph in standard form.

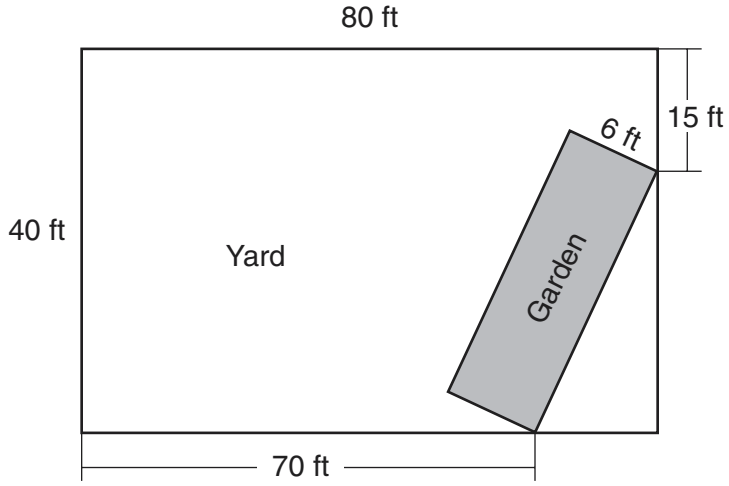


29 Currently, Tyrone has $60 and his sister has $135. Both get an allowance of $5 each week. Tyrone decides to save his entire allowance, but his sister spends all of hers each week plus an additional $10 each week. After how many weeks will they each have the same amount of money? [The use of the grid on the next page is optional.]

29 continued



30 A rectangular garden is going to be planted in a person's rectangular backyard, as shown in the accompanying diagram. Some dimensions of the backyard and the width of the garden are given. Find the area of the garden to the *nearest square foot.*



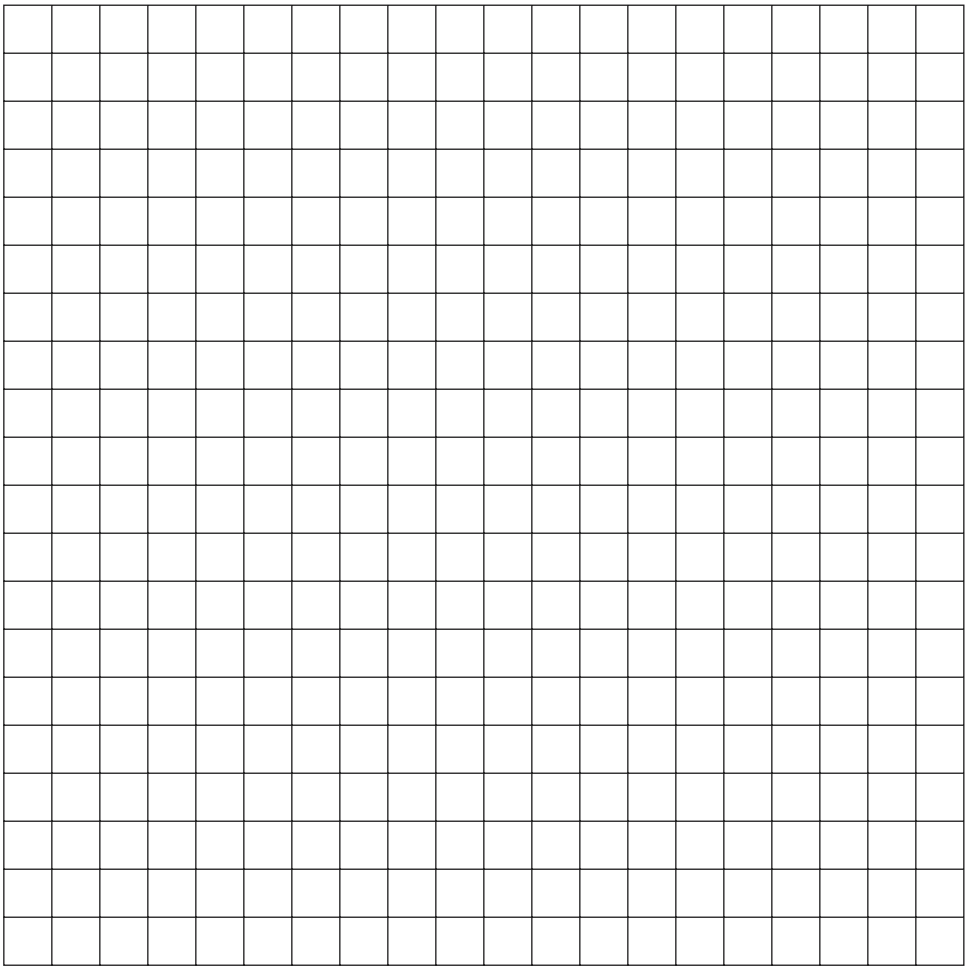
Part IV

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 At the Phoenix Surfboard Company, $306,000 in profits was made last year. This profit was shared by the four partners in the ratio 3:3:5:7. How much *more* money did the partner with the largest share make than one of the partners with the smallest share?

32 Alexandra purchases two doughnuts and three cookies at a doughnut shop and is charged $3.30. Briana purchases five doughnuts and two cookies at the same shop for $4.95. All the doughnuts have the same price and all the cookies have the same price. Find the cost of one doughnut and find the cost of one cookie.

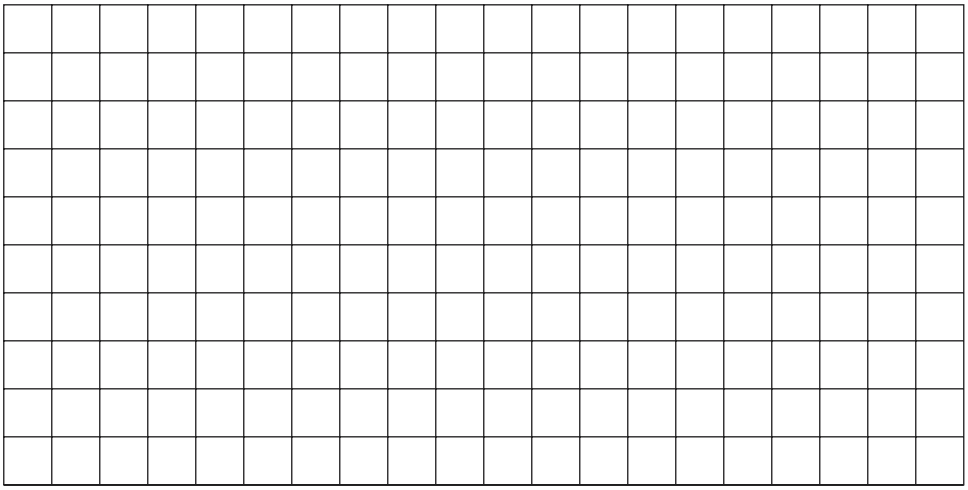
33 On the accompanying grid, draw and label quadrilateral $ABCD$ with points $A(1,2)$, $B(6,1)$, $C(7,6)$, and $D(3,7)$. On the same set of axes, plot and label quadrilateral $A'B'C'D'$, the reflection of quadrilateral $ABCD$ in the y-axis. Determine the area, in square units, of quadrilateral $A'B'C'D'$.



34 Sarah's mathematics grades for one marking period were 85, 72, 97, 81, 77, 93, 100, 75, 86, 70, 96, and 80.

a Complete the tally sheet and frequency table below, and construct and label a frequency histogram for Sarah's grades using the accompanying grid.

Interval (grades)	**Tally**	**Frequency**
61–70		
71–80		
81–90		
91–100		

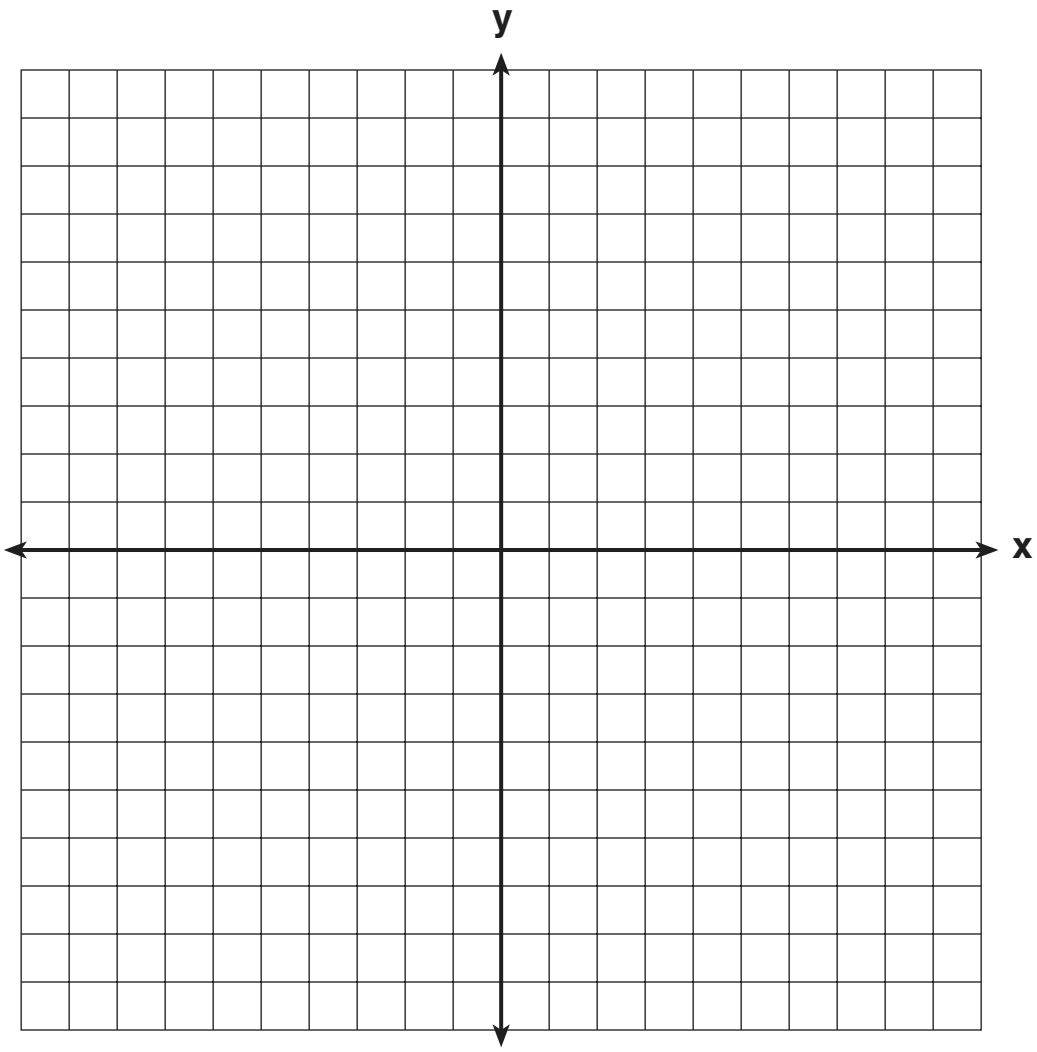


b Which interval contains the 75th percentile (upper quartile)?

35 On the accompanying set of axes, graph and label the following lines:

$y = 5$
$x = -4$
$y = \frac{5}{4}x + 5$

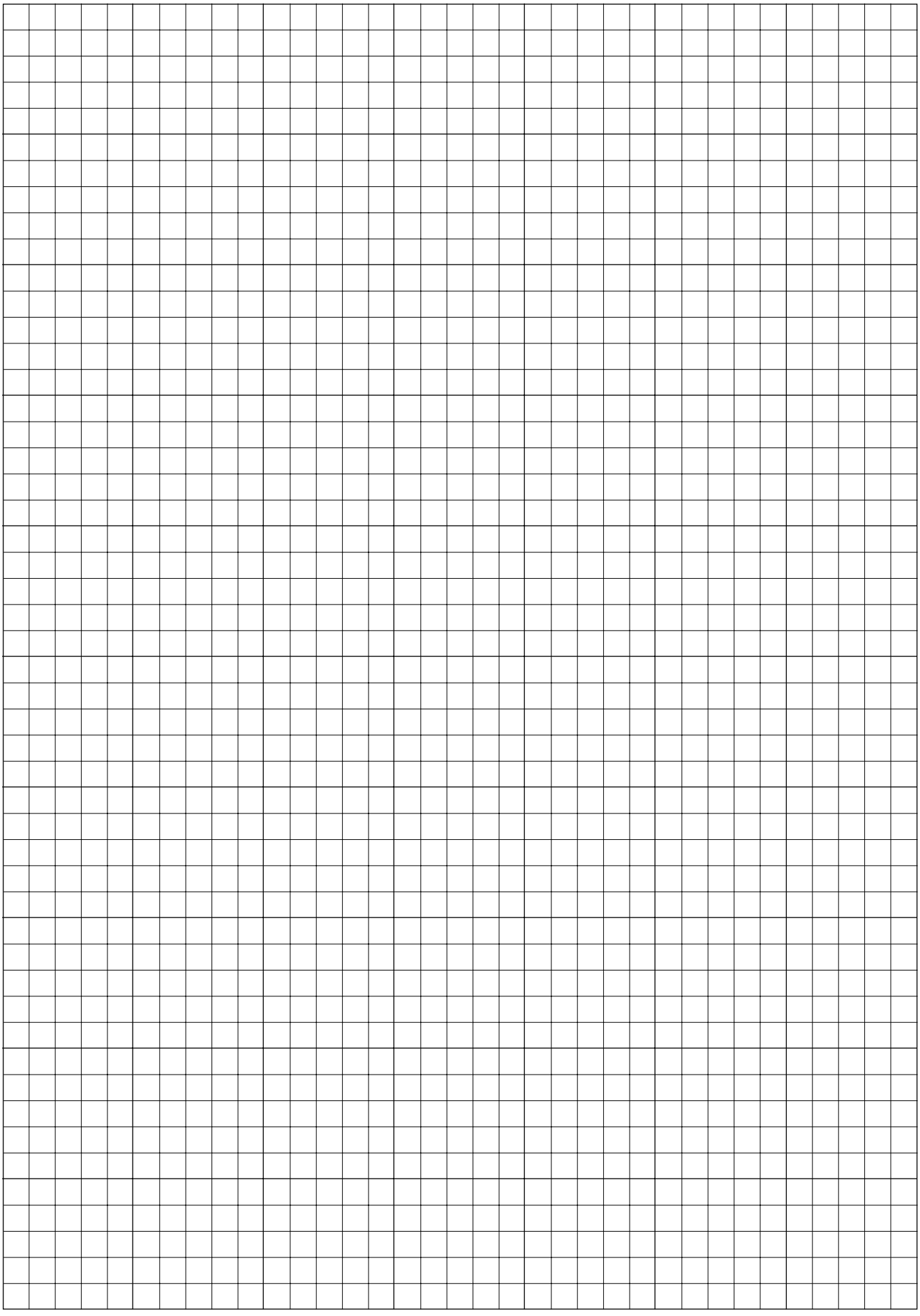
Calculate the area, in square units, of the triangle formed by the three points of intersection.



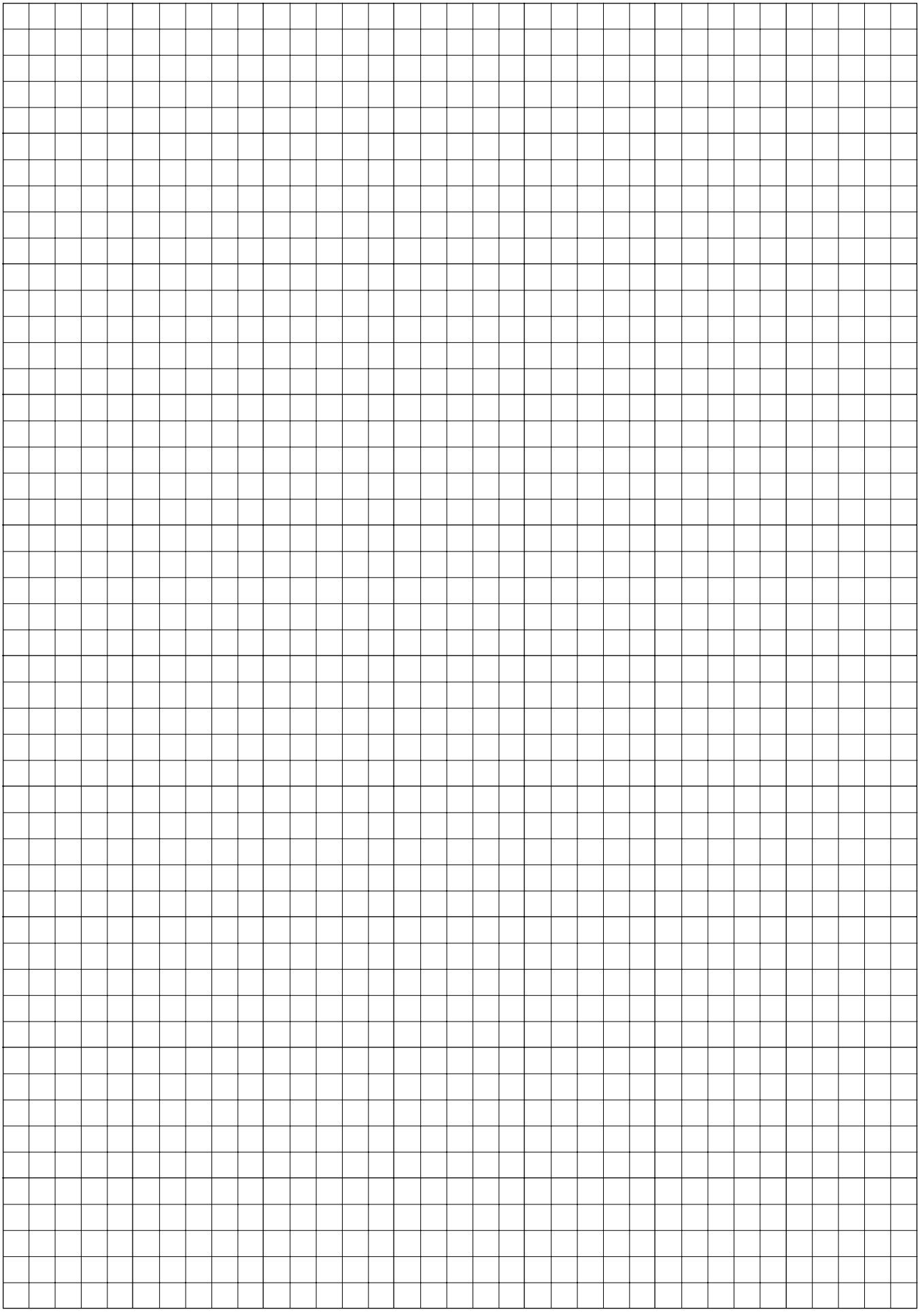
Tear Here

Tear Here

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



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



Tear Here

Tear Here

Tear Here

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS A

Monday, January 27, 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

Tear Here

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.**

Tear Here

Tear Here

FOR TEACHERS ONLY

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

MATHEMATICS A

Monday, January 27, 2003 — 1:15 to 4:15 p.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 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) 3	(11) 3	(16) 1
(2) 2	(7) 3	(12) 2	(17) 1
(3) 4	(8) 1	(13) 2	(18) 3
(4) 3	(9) 4	(14) 4	(19) 4
(5) 1	(10) 1	(15) 2	(20) 2

Part II

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

(21) **[2]** 6, and a correct tree diagram is drawn or sample space is listed.

[1] A correct tree diagram is drawn or sample space is listed, but no answer or an incorrect answer is found.

or

[1] An appropriate answer is found, based on an incorrect tree diagram or sample space.

or

[1] 6, but no tree diagram is drawn or sample space is listed.

[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]** 42.85714286 or an equivalent answer, and appropriate work is shown.

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

or

[1] An answer of 30 is found by dividing 1.8 by 6.

or

[1] An answer of 70 is found by dividing 4.2 by 6.

or

[1] 42.85714286 or an equivalent answer, 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]** 120, and appropriate work is shown, such as $1 \bullet 5 \bullet 4 \bullet 3 \bullet 2 \bullet 1$.

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

or

[1] 720 and ${}_6P_6$ or 6! is shown.

or

[1] 120, 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]** 20, and appropriate work is shown, such as $3{,}360 \div (14 \times 12)$.

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

or

[1] 20, 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]** 2, and appropriate work is shown.

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

or

[1] Appropriate work is shown to find the number of students for any flavor other than coffee.

or

[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.

Part III

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

(26) **[3]** 4, 6, and 8, and appropriate work is shown, such as the correct quadratic equation or trial and error with at least three trials and appropriate checks.

[2] The correct quadratic equation is solved, but one computational error is made, but three appropriate ages are listed.

or

[2] The correct quadratic equation is solved, but the negative root is not rejected, but three appropriate ages are listed.

or

[2] The correct quadratic equation is solved, but only one age 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] An incorrect equation of lesser difficulty is solved appropriately, and the three ages are listed.

or

[1] An incorrect quadratic equation of equal difficulty is solved appropriately, and the three ages are listed.

or

[1] The correct quadratic equation is shown, but more than one computational error is made.

or

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

or

[1] 4, 6, and 8, 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.

(27) **[3]** 374 grasshoppers and 187 crickets, and appropriate work is shown.

[2] An appropriate equation is solved or appropriate work is shown, but only one correct answer is found, or two correct answers are found but they are not identified clearly as grasshoppers or crickets, or the grasshoppers and crickets are labeled incorrectly.

or

[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] An incorrect equation of equal difficulty is solved appropriately.

or

[1] 374 grasshoppers and 187 crickets, but no work is shown.

[0] 374 and 187, but no work is shown, and the answers are not identified clearly as grasshoppers or crickets.

or

[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]** $y = x^2 + 3x - 18$, and appropriate work leading from the roots to the equation is shown.

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

or

[2] $x^2 + 3x - 18 = 0$, but appropriate work is shown.

or

[2] Only the correct factors $(x + 6)$ and $(x - 3)$ are shown.

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

or

[1] Only the roots –6 and 3 are shown, such as $x = -6$, $x = 3$.

or

[1] $y = x^2 + 3x - 18$, 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) **[3]** 5, and appropriate work is shown, such as the equation $60 + 5x = 135 - 10x$, or trial and error with at least three trials and appropriate checks, or a graph.

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

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 or graphing error is made.

or

[1] 5, 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.

(30) **[3]** 162, and appropriate work is shown.

[2] The Pythagorean theorem is used correctly to find the hypotenuse, but the result is not multiplied by 6.

or

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

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

or

[1] 162, 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 IV

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

(31) **[4]** $68,000, and appropriate work is shown.

[3] $119,000 and $51,000, and appropriate work is shown, but the answers are not subtracted to find the difference.

or

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

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

[1] The value for one share ($17,000) is found, but no further correct work is shown.

or

[1] $68,000, but no work is shown.

[0] $17,000 or $119,000 or $51,000, and no work is shown.

or

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

(32) **[4]** One doughnut is \$0.75 and one cookie is \$0.60, and appropriate work is shown, such as a system of equations, trial and error with at least three trials and appropriate checks, or a table.

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

or

[3] Appropriate work is shown, but only one correct answer is found, or two correct answers are found, but they are not identified clearly as doughnuts or cookies, or the doughnuts and cookies are labeled incorrectly.

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

or

[2] Two equations are written, one correct and one incorrect, but two appropriate answers are 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] Two correct equations are written, but no further correct work is shown.

or

[1] One doughnut is \$0.75 and one cookie is \$0.60, but no work or only one trial with an appropriate check is shown.

[0] One correct equation is shown, and no answer or only one appropriate answer is found.

or

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

(33) **[4]** Quadrilaterals *ABCD* and *A′B′C′D′* are drawn and labeled correctly and 24 is found as the area, and appropriate work is shown.

[3] One graphing error is made in the transformation, but an appropriate area of *A′B′C′D′* is found.

or

[3] Correct quadrilaterals are drawn and labeled, but one computational error is made in determining the area.

or

[3] Quadrilaterals *ABCD* and *A′B′C′D′* are drawn correctly and 24 is found as the area, but the vertices are not labeled.

[2] Correct quadrilaterals are drawn and labeled, but no further correct work is shown.

or

[2] One conceptual error is made, such as reflecting in the *x*-axis, but the correct area is found.

[1] 24, 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.

(34) *a* **[3]** The frequency table is completed correctly, and a histogram is drawn with a correct scale and is labeled correctly.

[2] One or two errors are made in the frequency table, but an appropriate histogram is drawn.

or

[2] The frequency table is completed correctly, but one error is made in drawing the histogram.

[1] A correct histogram is drawn, but the frequency table is not completed.

b **[1]** The interval 91–100 is identified as containing the 75th percentile.

or

[1] The appropriate interval is identified, based on an incorrect frequency table in part *a*.

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.

(35) **[4]** All lines are graphed and labeled correctly and area = 10, and appropriate work is shown.

[3] The lines are graphed and labeled correctly, but the area of the triangle is missing or is incorrect.

or

[3] One of the lines is graphed incorrectly, but the area for the given triangle is found appropriately.

[2] One of the lines is graphed incorrectly, and the area of the triangle is missing or is incorrect.

[1] Only one line is graphed and labeled correctly, and no further correct work is shown.

or

[1] All three lines are graphed incorrectly, but the area for the given triangle is found appropriately.

or

[1] Area = 10, but no work is shown.

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

Map to Learning Standards

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

Regents Examination in Mathematics A

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