

 .. SECTION 3 ..
 .. COGNITIVE ITEM TABLE ..

IN THIS TABLE, THERE ARE FOR EACH OF THE 199 INTERNATIONAL
 COGNITIVE ITEMS TWO LINES OF INTERNATIONAL INFORMATION PLUS ONE
 LINE OF NATIONAL INFORMATION FOR EACH COUNTRY DESCRIBED IN THIS
 FILE. THE INTERNATIONAL INFORMATION INCLUDES THE ITEM NUMBER AND
 ABBREVIATED TEXT, THE KEY, THE CONTENT CODES, THE STANDARD FORMS
 AND ITEM POSITIONS, AND THE SUBTEST MAPPINGS. THE NATIONAL
 INFORMATION INCLUDES THE NATIONAL FORM AND ITEM POSITION AND
 APPLICATION KEYS FOR TEACHER OTL, STUDENT PRETEST, AND STUDENT
 POSTTEST USE OF THE ITEM. INFORMATION ABOUT NATIONAL OPTION ITEMS
 IS ALSO INCLUDED, AS DESCRIBED LATER.

.....
 . INTERNATIONAL LINE ONE .

1-3 ITEM REFERENCE NUMBER FROM ITEM BANK
 5-80 ABBREVIATED TEXT OF THE INTERNATIONAL FORM OF THE ITEM

.....
 . INTERNATIONAL LINE TWO .

5 CORRECT RESPONSE ALTERNATIVE
 1 A
 2 B
 3 C
 4 D
 5 E

7-9 POSITION IN INTERNATIONAL CONTENT GRID
 000 ARITHMETIC
 001 WHOLE NUMBERS
 002 COMMON FRACTIONS
 003 DECIMAL FRACTIONS
 004 RATIO, PROPORTION, PERCENT
 005 NUMBER THEORY
 006 POWERS
 100 ALGEBRA
 101 INTEGERS
 102 RATIONALS
 103 INTEGER EXPONENTS
 104 FORMULAS
 105 POLYNOMIALS EXPRESSIONS
 106 EQUATIONS AND INEQUATIONS
 107 RELATIONS
 200 GEOMETRY
 201 CLASSIFICATION
 202 PROPERTIES

203 CONGRUENCE
204 SIMILARITY
205 GEOMETRIC CONSTRUCTIONS
206 PYTHAGOREAN
207 COORDINATES
208 DEDUCTIONS
209 TRANSFORMATION (INFORMAL)
212 SPATIAL VISUALIZATION
215 TRANSFORMATIONAL GEOMETRY
300 PROBABILITY AND STATISTICS
302 ORGANIZATION
303 REPRESENTATION
304 MEAN, MEDIAN, MODE
306 PROBABILITY
400 MEASUREMENT
401 UNITS
402 ESTIMATION
403 APPROXIMATION
404 DETERMINING MEASURES

- 11 BEHAVIOURAL LEVEL
1 COMPUTATION
2 COMPREHENSION
3 APPLICATION
4 ANALYSIS
- 13 ANCHOR ITEM STATUS
0 NOT AN ANCHOR
1 ANCHOR ITEM
2 MODIFIED ANCHOR ITEM
- 15 FORM PLACEMENT FOR THE CROSSSECTIONAL STUDY
17-18 POSITION WITHIN FORM FOR THE CROSSSECTIONAL STUDY
- 20 FORM PLACEMENT FOR THE LONGITUDINAL STUDY
22-23 POSITION WITHIN FORM FOR THE LONGITUDINAL STUDY

NOTE... THE PLACEMENT AND POSITION NUMBERS ARE ZERO FOR ITEMS NOT INCLUDED IN A GIVEN STUDY. THE PLACEMENT AND POSITION NUMBERS FOR THE LONGITUDINAL STUDY ARE THOSE OF THE SUGGESTED STANDARD.

- 25 LONGITUDINAL CORE TYPE
0 NOT LONGITUDINAL INTERNATIONAL CORE
1 LONGITUDINAL INTERNATIONAL CORE
- 27 STRATUM FOR CROSSSECTIONAL FORM CONSTRUCTION
1 ARITHMETIC
2 ALGEBRA
3 GEOMETRY
4 PROBABILITY AND STATISTICS
5 MEASUREMENT
- 29 STRATUM FOR LONGITUDINAL FORM CONSTRUCTION
1 FRACTIONS
2 RATIO PROPORTION PERCENT
3 ALGEBRA
4 GEOMETRY
5 MEASUREMENT
6 INTEGERS (NOT IN INTERNATIONAL CORE)
7 PROBABILITY AND STATISTICS (NOT IN

INTERNATIONAL CORE)

31-32 SUBTEST CODE 1
34-35 SUBTEST CODE 2
...
79-80 SUBTEST CODE 17

THESE ARE THE SUBTESTS DEFINED IN MEMORANDUM A/369,
WITH CORRECTIONS. THE NUMBER OF SUBTEST CODES PER
ITEM VARIES. THE FOLLOWING SUBTEST CODES ARE USED.

01 ESTIMATION AND APPROXIMATION
02 NEW MATHS IN 1ST STUDY
03 BASIC SKILLS
04 ALGEBRA (COMPUTATION)
05 CALCULATOR USE
06 ARITHMETIC (COMPUTATION)
07 PROPORTIONATE THINKING
08 ANCHOR ITEMS
09 WHOLE NUMBERS
10 COMMON FRACTIONS
11 COMMON FRACTIONS (COMPUTATION)
12 DECIMAL FRACTIONS
13 RATIO AND PROPORTION
14 PERCENT
15 ARITHMETIC
16 ARITHMETIC (OTHER THAN COMPUTATION)
17 INTEGERS
18 FORMULAS AND ALGEBRAIC EXPRESSIONS
19 EQUATIONS AND INEQUALITIES
20 ALGEBRA
21 ALGEBRA (OTHER THAN COMPUTATION)
22 CLASSIFICATION OF PLANE FIGURES
23 PROPERTIES OF PLANE FIGURES
24 CONGRUENCE OF PLANE FIGURES
25 SIMILARITY OF PLANE FIGURES
26 PLANE FIGURES
27 COORDINATES
28 INFORMAL TRANSFORMATIONS IN GEOMETRY
29 GEOMETRY
30 GEOMETRY (COMPUTATION)
31 GEOMETRY (OTHER THAN COMPUTATION)
32 REPRESENTATION OF DATA
33 (NOT USED)
34 PROBABILITY AND STATISTICS
35 PROBABILITY AND STATISTICS (OTHER THAN
COMPUTATION)
36 STANDARD UNITS OF MEASURE
37 DETERMINATION OF MEASURES
38 MEASUREMENT
39 MEASUREMENT (COMPUTATION)
40 MEASUREMENT (OTHER THAN COMPUTATION)
41 PROBABILITY AND STATISTICS (COMPUTATION)
42 MODIFIED ANCHOR ITEMS
43 NON-VERBAL
44 VERBAL
45 ANCHOR (NON-VERBAL)
46 ANCHOR (VERBAL)
47 DIAGRAMMATIC ITEMS (PAIRED WITH
NON-DIAGRAMMATIC)
48 NON-DIAGRAMMATIC ITEMS (PAIRED WITH
DIAGRAMMATIC)

.....
 . NATIONAL LINE (ONE PER COUNTRY) .
.....

2-3 COUNTRY CODE

5 FORM PLACEMENT FOR THE NATIONAL STUDY

7-8 POSITION WITHIN FORM FOR THE NATIONAL STUDY

NOTE. THE PLACEMENT AND POSITION NUMBERS, AND ALL APPLICATION KEYS WHICH FOLLOW, ARE ZERO FOR ITEMS NOT INCLUDED IN THE NATIONAL STUDY. THE TOTAL NUMBER OF INTERNATIONAL ITEMS PER FORM IS GIVEN IN SECTION 1 ABOVE. IN ADDITION, THERE MAY BE NATIONAL OPTION ITEMS AS DESCRIBED LATER.

10-12 APPLICATION KEY FOR USE OF THE ITEM AS A TEACHER OTL ITEM

14-16 APPLICATION KEY FOR USE OF THE ITEM AS A STUDENT PRETEST

18-20 APPLICATION KEY FOR USE OF THE ITEM AS A STUDENT POSTTEST

NOTE. THESE ARE 3-DIGIT CODES IN THE FORM (ABC). FOR EACH APPLICATION KEY, THE FIRST DIGIT (A) INDICATES THE QUALITY OF THE ITEM IMPLEMENTATION.

0 NOT USED (IMPLIES ZERO POSITION NUMBER ABOVE)

1 USED BUT SPOILED

2 NON-STANDARD ALTERNATIVES AND TEXT

3 NON-STANDARD ALTERNATIVES

4 NON-STANDARD TEXT

5 USED IN STANDARD FORM

THE SECOND AND THIRD DIGITS (BC) WILL GENERALLY BE IN AGREEMENT WITH THE INFORMATION PROVIDED FOR THE FORM IN SECTION 1 ABOVE, BUT THERE MAY BE ERRORS OF PRINTING, CODING, ETC., THAT CAUSE AN ITEM'S USAGE TO DIFFER FROM THE FORM AS A WHOLE, PERHAPS JUST FOR ONE KIND OF APPLICATION. THE SECOND DIGIT (B) INDICATES THE SAMPLE TO WHOM THE ITEM WAS APPLIED.

0 NO ONE

1 A SAMPLE OF THE ELIGIBLE RESPONDENTS

2 ALL RESPONDENTS

THE THIRD DIGIT (C) INDICATES WHICH QUESTIONS WERE ASKED WITH THE QUESTION. FOR THE TEACHER OTL APPLICATION KEY,

0 NOT USED

1 ESTIMATION

2 TAUGHT OR REVIEWED

3 1+2

4 IF NOT WHY

5 1+4

6 2+4

7 1+2+4

FOR THE STUDENT PRETEST OR POSTTEST APPLICATION KEY,

0 NOT USED

1 TEST RESPONSE

2 TAUGHT THIS YEAR

3 1+2

4 CALCULATOR

5 1+4

6 2+4

7 1+2+4

- 22 (FOR JAPAN ONLY) The part of the item on the special pretest. This is blank if the item is not in the pretest, or 1 or 2 for part one or two of the pretest. The first part had 20 items, and the second had 40.
- 24-25 (FOR JAPAN ONLY) The item number within the part of the special pretest, or blank if the item is not in the pretest.
- 27-80 COMMENTS CONCERNING PROBLEMS WITH QUALITY OR RESTRICTION OF SAMPLING APPLICATIONS OR QUESTIONS ASKED.

.....
 . NATIONAL OPTION ITEMS .

ITEMS NUMBERED 200-999 ARE NATIONAL OPTION ITEMS AND ARE NOT NECESSARILY FROM THE INTERNATIONAL POOL. FOR THESE ITEMS, THE FOLLOWING INFORMATION IS GIVEN...

- LINE 1.
 1-3 ITEM NUMBER (200-999)
 5-80 ABBREVIATED TEXT OF THE ITEM
- LINE 2.
 5 CORRECT RESPONSE ALTERNATIVE
 7-9 POSITION IN INTERNATIONAL CONTENT GRID
 11 BEHAVIOURAL LEVEL
 13-80 COMMENTARY ON CLASSIFICATION
- LINE 3.
 2-3 COUNTRY CODE
 5 FORM PLACEMENT FOR THE NATIONAL STUDY
 7-8 POSITION WITHIN FORM FOR THE NATIONAL STUDY
 10-12 APPLICATION KEY FOR USE OF THE
 ITEM AS TEACHER OTL
 14-16 APPLICATION KEY FOR USE OF THE
 ITEM AS STUDENT PRETEST
 18-20 APPLICATION KEY FOR USE OF THE
 ITEM AS STUDENT POSTTEST
 22-80 COMMENTARY REGARDING QUALITY OR RESTRICTIONS

THE CODING OF THIS INFORMATION IS THE SAME AS FOR INTERNATIONAL ITEMS. THE THIRD LINE SHOULD BE REPEATED FOR EACH COUNTRY USING THE NATIONAL OPTION ITEM (AND OMITTED FOR OTHER COUNTRIES). THE FULL TEXTS OF THE NATIONAL OPTION ITEMS ARE GIVEN IN SECTION 6 BELOW, WHERE THEY ARE IDENTIFIED WITH VARIABLE NAMES OF THE FORM ZNNN, WHERE NNN IS THE NUMBER GIVEN HERE.

 001 (22 * 18) - (47 + 59) IS EQUAL TO
 1 001 1 1 0 20 2 34 0 1 6 03 05 06 08 09 15 45
 15 2 34 527 513 511
 22 2 34 527 000 513
 25 2 34 527 515 515
 40 2 34 527 517 517
 54 0 20 527 000 523
 63 2 34 527 517 517
 79 2 34 527 517 517
 81 2 34 527 515 515
 002 MATCHSTICKS ARE ARRANGED AS FOLLOWS. IF THE PATTERN IS
 2 001 3 0 0 31 4 12 0 1 6 09 15 16

15 4 12 527 513 511
 22 4 12 527 000 513
 25 4 12 527 515 515
 40 4 12 527 517 517
 54 0 31 527 523 523 2 34
 63 4 12 527 517 517
 79 4 12 527 517 517
 81 4 12 527 515 515
 003 $2/5 + 3/8$ IS EQUAL TO
 5 002 1 1 0 17 0 31 1 1 1 03 06 08 10 11 15 43 45
 15 0 31 527 523 521
 22 0 31 527 523 523
 25 0 31 527 523 523
 40 0 31 527 527 527
 54 0 17 527 523 523 1 01
 63 0 31 527 527 527
 79 0 31 527 527 527
 81 0 31 527 523 523
 004 WHICH OF THE FOLLOWING IS A PAIR OF EQUIVALENT FRACTIONS?
 4 002 2 0 0 14 3 3 0 1 1 10 15 16
 15 0 04 527 523 521 3-3
 22 3 03 527 000 413 /e "1/2 and 14/24" -> "1/2 and 14/15"
 25 3 03 527 515 515
 40 3 03 527 517 517
 54 0 14 527 000 523
 63 3 03 527 517 517
 79 3 03 527 517 517
 81 3 03 527 515 515
 005 $0.40 * 6.38$ IS EQUAL TO
 3 003 1 1 0 18 0 26 0 1 1 03 05 06 08 12 15 43 45
 15 2 10 527 513 511 0-26
 22 0 26 527 523 523
 25 0 26 527 523 523
 40 0 26 527 527 527
 54 0 18 527 000 523
 63 0 26 527 527 527
 79 0 26 527 527 527
 81 0 26 527 523 523
 006 ALEXANDRA WALKED FROM RIVERVIEW TO BRIDGEPORT, WHICH ARE
 3 003 3 0 0 3 2 7 0 1 1 03 12 15 16 44 48
 15 0 20 527 523 521 2-7
 22 2 07 527 000 513
 25 2 07 527 515 515
 40 2 07 527 517 517
 54 0 03 527 523 523 2 04
 63 2 07 527 517 517
 79 2 07 527 517 517
 81 2 07 527 515 515
 007 (847.36) IN THE NUMBER IN THE BOX, THE DIGIT 6 REPRESENTS
 1 003 2 0 0 35 4 33 0 1 1 03 12 15 16
 15 0 15 527 523 521 4-33
 22 4 33 527 000 513
 25 4 33 527 515 515
 40 0 15 527 527 527
 54 0 35 527 523 523 1 02
 63 4 33 527 517 517
 79 4 33 527 517 517
 81 4 33 527 515 515
 008 IN A SCHOOL OF 800 PUPILS, 300 ARE BOYS. THE RATIO OF THE
 5 004 2 0 0 26 0 33 1 1 2 07 13 15 16
 15 0 33 527 523 521

22 0 33 527 523 523
 25 0 33 527 523 523
 40 0 33 527 527 527
 54 0 26 527 523 523 1 06
 63 0 33 527 527 527
 79 0 33 527 527 527
 81 0 33 527 523 523
 009 30 IS 75% OF WHAT NUMBER?
 1 004 1 0 0 33 0 36 0 1 2 06 07 14 15
 15 0 36 527 523 521
 22 0 36 527 523 523
 25 0 36 527 523 523
 40 0 36 527 527 527
 54 0 33 527 523 523 2 05
 63 0 36 527 527 527
 79 0 36 527 527 527
 81 0 36 527 523 523
 010 THE VALUE OF $2^{**3} * 3^{**2}$ IS
 4 006 1 1 0 23 2 16 0 1 2 03 05 06 08 15 45
 15 2 16 527 513 511
 22 2 16 527 000 513
 25 2 16 527 515 515
 40 2 16 527 517 517
 54 0 23 527 523 523 2 32
 63 2 16 527 517 517
 79 2 16 527 517 517
 81 2 16 527 515 515
 011 WHAT IS THE SQUARE ROOT OF $12 * 75$?
 2 008 2 1 0 34 1 30 0 1 2 05 08
 15 1 30 527 513 511
 22 1 30 527 000 513
 25 1 30 527 515 515
 40 1 30 527 517 517
 54 0 34 527 000 523
 63 1 30 527 517 517
 79 1 30 527 517 517
 81 1 30 527 515 515
 012 $(-2) * (-3)$ IS EQUAL TO
 5 101 1 0 0 4 0 16 1 2 3 04 17 20
 15 0 16 527 523 521
 22 0 16 527 523 523
 25 0 16 527 523 523
 40 0 16 527 527 527
 54 0 04 527 000 523
 63 0 16 527 527 527
 79 0 16 527 527 527
 81 0 16 527 523 523
 013 THE AIR TEMPERATURE AT THE FOOT OF A MOUNTAN IS 31 DEGREES.
 5 101 3 0 0 40 0 25 1 2 3 03 17 20 21 44
 15 0 25 527 523 521
 22 0 25 527 523 523
 25 0 25 527 523 523
 40 0 25 527 527 527
 54 0 40 527 523 523 2 14
 63 0 25 527 527 527
 79 0 25 527 527 527
 81 0 25 527 523 523
 014 WHICH OF THE FOLLOWING SEQUENCES OF NUMBERS IS IN THE ORDER
 3 102 2 0 0 1 1 35 0 2 3 20 21
 15 0 30 527 523 521 1-35
 22 1 35 527 000 513

25 1 35 527 515 515
 40 1 35 527 517 517
 54 0 01 527 523 523 2 12
 63 1 35 527 517 517
 79 1 35 527 517 517
 81 1 35 527 515 515
 015 SIMPLIFY: $5X + 3Y + 2X - 4Y$
 4 104 1 1 0 10 2 24 0 2 3 04 08 18 20 43 45
 15 0 13 527 523 521 2-24
 22 2 24 527 000 513
 25 2 24 527 515 515
 40 2 24 527 517 517
 54 0 10 527 523 523 1 11
 63 2 24 527 517 517
 79 2 24 527 517 517
 81 2 24 527 515 515
 016 SODA COSTS A CENTS FOR EACH BOTTLE, BUT THERE IS A REFUND
 2 104 3 1 0 25 4 27 0 2 3 08 18 20 21 46
 15 0 35 527 523 521 4-27
 22 4 27 527 000 413
 25 4 27 527 515 515
 40 4 27 527 517 517
 54 0 25 527 523 523 2 15
 63 4 27 527 517 517
 79 4 27 527 517 517
 81 4 27 527 515 515 NATIONAL ADDS INCLUDING THE DEPOSIT
 017 IF $P = LW$ AND IF $P = 12$ AND $L = 3$, THEN W IS EQUAL TO
 3 106 1 1 0 12 0 13 0 2 3 04 08 19 20 43 45
 15 2 24 527 513 511 0-13
 22 0 13 527 523 523
 25 0 13 527 523 523
 40 0 13 527 527 527
 54 0 12 527 523 523 2 10
 63 0 13 527 527 527
 79 0 13 527 527 527
 81 0 13 527 523 523
 018 THE ERROR IN THE ABOVE REASONING, IF ONE EXISTS, FIRST
 1 106 4 0 0 22 2 12 0 2 3 19 20 21
 15 0 27 527 523 521 2-12
 22 2 12 527 000 513
 25 2 12 527 515 515
 40 0 27 527 527 527
 54 0 22 527 523 523 2 18
 63 2 12 527 517 517
 79 2 12 527 517 517
 81 2 12 527 515 515
 019 THE TABLE BELOW COMPARES THE HEIGHT FROM WHICH A BALL IS
 3 107 2 0 0 39 0 30 0 2 3 20 21
 15 1 33 527 513 511 0-30
 22 1 33 527 000 513 0-30 ON ORIGINAL FORM
 25 0 30 527 523 523
 40 1 33 527 517 517
 54 0 39 527 523 523 1 12
 63 0 30 527 527 527
 79 0 30 527 527 527
 81 0 30 527 523 523
 020 THERE ARE 9 ELEMENTS IN SET Q AND 6 IN SET R. HOW MANY
 4 110 3 0 0 16 0 0 0 2 3 20 21
 15 0 00 000 000 000
 22 0 00 000 000 000
 25 0 00 000 000 000

40 0 00 000 000 000
54 0 16 527 000 523
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

021 A QUADRILATERAL MUST BE A PARALLELOGRAM IF IT HAS

5 201 2 0 0 28 3 23 0 3 4 22 26 29 31
15 0 07 527 523 521 3-23

22 3 23 527 000 513
25 3 23 527 515 515

40 3 23 527 017 017 /b and /e are both correct!

54 0 28 527 000 523
63 3 23 527 517 517
79 3 23 527 517 517
81 3 23 527 515 515

022 AB, CD, AD EF ARE INTERSECTING STRAIGHT LINES AS SHOWN

1 202 1 0 0 9 1 27 0 3 4 23 26 29 30
15 1 27 527 513 511

22 1 27 527 000 513
25 1 27 527 515 515

40 1 27 527 517 517
54 0 09 527 523 523 1 13

63 1 27 527 517 517
79 1 27 527 517 517
81 1 27 527 515 515

023 THE LENGTH OF THE CIRCUMFERENCE OF THE CIRCLE WITH CENTER AT

4 202 4 1 0 32 0 19 1 3 4 07 08 23 26 29 31 46

15 0 19 527 523 521
22 0 19 527 523 523

25 0 19 527 523 523
40 0 19 527 527 527

54 0 32 527 523 523 1 16
63 0 19 527 527 527

79 0 19 527 527 527
81 0 19 527 523 523

NATIONAL ADDS COMMA AFTER "24" IN TEXT

024 IF SEGMENT PQ WERE DRAWN FOR EACH FIGURE SHOWN BELOW, IT

4 203 3 0 0 36 3 29 0 3 4 24 26 29 31

15 3 29 527 513 511
22 3 29 527 000 513

25 3 29 527 515 515
40 3 29 527 517 517

54 0 36 527 000 523
63 3 29 527 517 517

79 3 29 527 517 517
81 3 29 527 515 515

025 THE TRIANGLES SHOWN ABOVE ARE CONGRUENT. THE MEASURES OF

2 203 3 0 0 6 1 6 0 3 4 24 26 29 31

15 1 06 527 513 511
22 1 06 527 000 513

25 1 06 527 515 515
40 1 06 527 517 517

54 0 06 527 000 523
63 1 06 527 517 517

79 1 06 527 517 517
81 1 06 527 515 515

026 ON LEVEL GROUND, A BOY 5 UNITS TALL CASTS A SHADOW 3 UNITS

2 204 3 1 0 19 4 15 0 3 4 07 08 25 26 29 31 46 48

15 4 15 527 513 511
22 4 15 527 000 513

25 4 15 527 515 515
40 4 15 527 517 517

54 0 19 527 523 523 1 15
63 4 15 527 517 517
79 4 15 527 517 517
81 4 15 527 515 515

027 (RIGHT TRIANGLE WITH 2 SIDES GIVE) WHAT IS THE VALUE OF S?

2 206 1 0 0 2 3 1 0 3 4 29 30
15 3 01 527 513 511
22 3 01 527 000 513
25 3 01 527 515 515
40 3 01 527 517 517
54 0 02 527 000 523
63 3 01 527 517 517
79 3 01 527 517 517
81 3 01 527 515 515

028 WHAT ARE THE COORDINATES OF POINT P?

4 207 1 0 0 38 0 39 1 3 4 27 29 30
15 0 39 527 523 521
22 0 39 527 523 523
25 0 39 527 523 523
40 0 39 527 527 527
54 0 38 527 523 523 2 19
63 0 39 527 527 527
79 0 39 527 527 527
81 0 39 527 523 523

"P" OMITTED IN FIGURE IN NATIONAL

029 ONE OF THE FOLLOWING POINTS CAN BE JOINED TO THE POINT (-3,4)

1 207 3 0 0 29 1 34 0 3 4 27 29 31 48
15 1 34 527 513 511
22 1 34 527 000 513
25 1 34 527 515 515
40 1 34 527 517 517
54 0 29 527 523 523 2 24
63 1 34 527 517 517
79 1 34 527 517 517
81 1 34 527 515 515

030 IN WHICH DIAGRAM BELOW IS THE SECOND FIGURE THE IMAGE OF THE

3 209 1 0 0 5 1 2 0 3 4 28 29 30
15 1 02 527 513 511
22 1 02 527 000 513
25 1 02 527 515 515
40 1 02 527 517 517
54 0 05 527 000 523
63 1 02 527 517 517
79 1 02 527 517 517
81 1 02 527 515 515

031 THE DIAGRAM SHOWS A CARDBOARD CUBE WHICH HAS BEEN CUT ALONG

4 212 3 0 0 13 0 7 0 3 4 29 31
15 3 23 527 513 511 0-7
22 0 07 527 523 523
25 0 07 527 523 523
40 4 22 527 517 517
54 0 13 527 523 523 2 25
63 0 07 527 527 527
79 0 07 527 527 527
81 0 07 527 523 523

032 HERE IS A TABLE THAT SHOWS THE NUMBER OF TREES PLANTED ALONG

5 302 2 0 0 7 4 34 0 4 7 03 34 35
15 4 34 527 513 511
22 4 34 527 000 513
25 4 34 527 515 515
40 4 34 527 517 517
54 0 07 527 000 523

63 4 34 527 517 517
 79 4 34 527 517 517
 81 4 34 527 515 515 NATIONAL USES "PLANTING"--ADDS "POINT" TO CHOICES
 033 THE CIRCLE GRAPH SHOWS THE PROPORTION OF VARIOUS GRAIN CROPS
 1 303 2 0 0 21 1 22 0 4 7 03 32 34 35
 15 1 22 527 513 511
 22 1 22 527 000 513
 25 1 22 527 515 515
 40 1 22 527 517 517
 54 0 21 527 000 523
 63 1 22 527 517 517
 79 1 22 527 517 517
 81 1 22 527 515 515
 034 WHICH OF THESE IS A TRUE STATEMENT ABOUT THE INFORMATION
 3 303 3 0 0 15 4 21 0 4 7 03 32 34 35
 15 4 21 527 513 511
 22 4 21 000 000 513 teacher otl lost in data processing
 25 4 21 527 515 515
 40 4 21 527 517 517
 54 0 15 527 000 523
 63 4 21 527 517 517
 79 4 21 527 517 517
 81 4 21 527 515 515
 035 THE ARITHMETIC MEAN (AVERAGE) OF: 1.50, 2.40, 3.75 IS EQUAL
 2 304 1 1 0 27 3 30 0 4 7 05 08 34 41 43 45
 15 3 30 527 513 511
 22 3 30 527 000 513
 25 3 30 527 515 515
 40 3 30 527 517 517
 54 0 27 527 000 523
 63 3 30 527 517 517
 79 3 30 527 517 517
 81 3 30 527 515 515
 036 WHICH OF THE FOLLOWING IS ... TO THE WEIGHT OF A NORMAL MAN?
 2 401 1 0 0 30 3 2 0 5 5 01 03 36 38 39
 15 3 02 527 513 511
 22 3 02 527 000 513
 25 3 02 527 515 515
 40 3 02 527 517 517
 54 0 30 527 000 523
 63 3 02 527 517 517
 79 3 02 527 517 517
 81 3 02 527 515 515
 037 THE TOTAL AREA OF THE TWO TRIANGLES IS
 1 404 3 0 0 24 2 28 0 5 5 37 38 40
 15 2 28 527 513 511
 22 2 28 527 000 513
 25 2 28 527 515 515
 40 2 28 527 517 517
 54 0 24 527 000 523
 63 2 28 527 517 517
 79 2 28 527 517 517
 81 2 28 527 515 515
 038 ON THE ABOVE SCALE THE READING INDICATED BY THE ARROW IS
 5 402 3 1 0 37 0 9 0 5 5 01 03 08 38 40
 15 0 09 527 523 521
 22 0 09 527 523 523
 25 0 09 527 523 523
 40 0 09 527 527 527
 54 0 37 527 523 523 2 29
 63 0 09 527 527 527

79 0 09 527 527 527
 81 0 09 527 523 523
 039 WHAT IS THE VOLUME OF A RECTANGULAR BOX WITH INTERIOR
 5 404 1 0 0 11 4 2 0 5 5 03 37 38 39 43
 15 4 02 527 513 511
 22 4 02 527 000 313 /a "27 cm3" -> "21 cm3"
 25 4 02 527 515 515
 40 4 02 527 517 517
 54 0 11 527 000 523
 63 4 02 527 517 517
 79 4 02 527 517 517
 81 4 02 527 515 515
 040 THERE IS A BRASS PLATE OF THE SHAPE AND DIMENSIONS SHOWN IN
 2 404 3 1 0 8 3 31 0 5 5 08 37 38 40
 15 3 31 527 513 511
 22 3 31 527 000 513
 25 3 31 527 515 515
 40 3 31 527 517 517
 54 0 08 527 523 523 1 18
 63 3 31 527 517 517
 79 3 31 527 517 517
 81 3 31 527 515 515
 041 1054 - 865
 1 001 1 0 1 27 4 13 0 1 6 03 05 06 09 15 43
 15 4 13 527 513 511
 22 4 13 527 000 513
 25 4 13 527 515 515
 40 4 13 527 517 517
 54 1 27 527 000 513
 63 4 13 527 517 517
 79 4 13 527 517 517
 81 4 13 527 515 515
 042 WHICH OF THE FOLLOWING IS EQUAL TO A QUARTER OF A MILLION?
 4 001 1 2 1 33 1 1 0 1 6 03 05 06 08 09 15
 15 1 01 527 513 511
 22 1 01 527 000 513
 25 1 01 527 515 515
 40 1 01 527 517 517
 54 1 33 527 000 513
 63 1 01 527 517 517
 79 1 01 527 517 517
 81 1 01 527 515 515
 043 WHICH OF THE POINTS A, B, C, D, E ON THIS NUMBER LINE
 5 002 2 0 1 11 0 37 1 1 1 10 15 16
 15 0 37 527 523 521
 22 0 37 527 523 523
 25 0 37 527 523 523
 40 0 37 527 527 527
 54 1 11 527 000 513
 63 0 37 527 527 527
 79 0 37 527 527 527
 81 0 37 527 523 523
 044 THERE ARE 35 STUDENTS IN A CLASS. 1/5 OF THEM COME TO SCHOOL
 2 002 3 0 1 10 2 35 0 1 1 03 10 15 16 44
 15 2 35 527 513 511
 22 2 35 527 000 513
 25 2 35 527 515 515
 40 0 04 527 527 527
 54 1 10 527 523 513 2 03
 63 2 35 527 517 517
 79 2 35 527 517 517

81 2 35 527 515 515
 045 THE VALUE OF $0.2131 * 0.02958$ IS APPROXIMATELY
 3 003 2 1 1 21 0 15 0 1 1 01 05 08 12 15 16 45
 15 4 33 527 513 511 0-15
 22 0 15 527 523 523
 25 0 15 527 523 523
 40 4 33 527 517 517
 54 1 21 527 000 513
 63 0 15 527 527 527
 79 0 15 527 527 527
 81 0 15 527 523 523
 046 20% OF 125 IS EQUAL TO
 4 004 1 0 1 16 0 38 1 1 2 03 05 06 14 15
 15 0 38 527 523 521
 22 0 38 527 523 523
 25 0 38 527 523 523
 40 0 38 527 527 527
 54 1 16 527 523 513 1 05
 63 0 38 527 527 527
 79 0 38 527 527 527
 81 0 38 527 523 523
 047 IF THE RATIO OF 2 TO 5 EQUALS THE RATIO OF N TO 100, THEN N
 3 004 2 2 1 20 3 18 0 1 2 07 13 15 16 42 43
 15 0 14 527 523 521 3-18
 22 3 18 527 000 513
 25 3 18 527 515 515
 40 0 14 527 527 527
 54 1 20 527 523 513 2 06
 63 3 18 527 517 517
 79 3 18 527 517 517
 81 3 18 527 515 515
 048 IF $10^{**2} * 10^{**3} = 10^{**N}$ THEN N IS EQUAL TO
 2 006 1 0 1 17 1 24 0 1 2 06 15
 15 1 24 527 513 511
 22 1 24 527 000 513
 25 1 24 527 515 515
 40 1 24 527 517 517
 54 1 17 527 000 513
 63 1 24 527 517 517
 79 1 24 527 517 517
 81 1 24 527 515 515
 049 $-5(6 - 4)$ IS EQUAL TO
 4 101 1 0 1 22 4 31 0 2 3 04 17 20
 15 4 31 527 513 511
 22 4 31 527 000 513
 25 4 31 527 515 515
 40 4 31 527 517 517
 54 1 22 527 000 513
 63 4 31 527 517 517
 79 4 31 527 517 517
 81 4 31 527 515 515
 050 JOHN IS 4 YEARS OLDER THAN ELLEN AND ELLEN IS 11 YEARS
 2 101 3 0 1 3 0 0 0 2 3 17 20 21
 15 0 00 000 000 000
 22 0 00 000 000 000
 25 0 00 000 000 000
 40 0 00 000 000 000
 54 1 03 527 000 513
 63 0 00 000 000 000
 79 0 00 000 000 000
 81 0 00 000 000 000

051 A STUDENT'S SOLUTION TO THE PROBLEM....CHECK THE STUDENT'S

5 102 4 0 1 15 0 0 0 2 3 20 21
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 1 15 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

052 THE COST OF PRINTING GREETING CARDS CONSISTS OF A FIXED

1 104 3 0 1 1 3 12 0 2 3 20 21 18
15 3 12 527 513 511
22 3 12 527 000 513
25 3 12 527 515 515
40 3 12 527 517 517
54 1 01 527 000 513
63 3 12 527 517 517
79 3 12 527 517 517
81 3 12 527 515 515

053 WHEN $X = 2$, $(7X + 4) / (5X - 4)$ IS EQUAL TO

2 105 1 0 1 29 1 28 0 2 3 04 20
15 1 28 527 513 511
22 1 28 527 000 513
25 1 28 527 115 515
40 1 28 527 517 517
54 1 29 527 523 513 2 09
63 1 28 527 517 517
79 1 28 527 517 517
81 1 28 527 515 515

ITEM SPOILED FOR PRETEST - CORRECT CHOICE HAD DEC PT

054 WHICH EQUATION IS TRUE FOR ALL VALUES OF N?

1 106 2 0 1 32 4 20 0 2 3 19 20 21
15 4 20 527 513 511
22 4 20 527 000 513
25 4 20 527 515 515
40 4 20 527 517 517
54 1 32 527 000 513
63 4 20 527 517 517
79 4 20 527 517 517
81 4 20 527 515 515

055 FOR THE TABLE SHOWN, A FORMULA THAT COULD RELATE M AND N IS

5 107 3 0 1 2 2 5 0 2 3 20 21
15 2 05 527 513 511
22 2 05 527 000 513
25 2 05 527 515 515
40 0 35 527 527 527
54 1 02 527 523 513 2 16
63 2 05 527 517 517
79 2 05 527 517 517
81 2 05 527 515 515

056 WHICH ONE OF THE FOLLOWING DIAGRAMS ILLUSTRATES THE STATEMENT

3 110 1 0 1 28 0 0 0 2 3 04 20
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 1 28 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

057 THE FIGURE QRST IS A SQUARE AND PQT AN EQUILATERAL TRIANGLE.

4 201 3 0 1 9 1 31 0 3 4 22 26 29 31
15 1 31 527 513 511
22 1 31 527 000 513
25 1 31 527 515 515
40 1 31 527 517 517
54 1 09 527 000 513
63 1 31 527 517 517
79 1 31 527 517 517
81 1 31 527 515 515

058 LINES AB AND CD ARE PARALLEL. TWO ANGLES WHOSE MEASURES
2 202 2 0 1 13 1 10 0 3 4 23 26 29 31

15 1 10 527 513 511
22 1 10 527 000 513
25 1 10 527 515 515
40 1 10 527 517 517
54 1 13 527 000 513
63 1 10 527 517 517
79 1 10 527 517 517
81 1 10 527 515 515

059 THREE STRAIGHT LINES INTERSECT AS SHOWN IN THE DIAGRAM.

4 202 4 1 1 34 2 8 0 3 4 08 23 26 29 31
15 2 08 527 513 511
22 2 08 527 000 413
25 2 08 527 515 515
40 2 08 527 517 517
54 1 34 527 523 513 2 26
63 2 08 527 517 517
79 2 08 527 517 517
81 2 08 527 515 515

MODIFICATION IN TEXT WORDING

060 TWO OF THESE TRIANGLES ARE SIMILAR. THEY ARE

5 204 1 0 1 26 0 0 0 3 4 25 26 29 30
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 1 26 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

061 IF S IS THE SET OF POINTS WITH X-COORDINATES GREATER THAN 3

1 207 2 0 1 30 0 0 0 3 4 27 29 31
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 1 30 527 523 513 1 14
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

062 IN THE ABOVE RECTANGLE THE MEASURE OF ANGLES ROQ IS

3 208 3 0 1 4 2 13 0 3 4 29 31
15 2 13 527 513 511
22 2 13 527 000 513
25 2 13 527 515 515
40 2 13 527 517 517
54 1 04 527 000 513
63 2 13 527 517 517
79 2 13 527 517 517
81 2 13 527 515 515

063 PQRS IS A RECTANGLE. ITS IMAGE AFTER A TRANSFORMATION IS

1 209 1 0 1 18 4 29 0 3 4 28 29 30

15 4 29 527 513 511
22 4 29 527 000 513
25 4 29 527 515 515
40 4 29 527 517 517
54 1 18 527 000 513
63 4 29 527 517 517
79 4 29 527 417 417 slight wording change, but ok
81 4 29 527 515 515 WORDS ADDED TO NAT ALTS - FLIP
064 WHAT IS THE NAME OF THE SOLID FIGURE, EACH OF WHOSE FACES
 1 211 1 0 1 14 0 0 0 3 4 29 30
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 1 14 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000
065 YOU WISH TO KNOW ABOUT THE POPULARITY OF THE SOFT-DRINK SLOSH
 5 301 2 0 1 19 3 7 0 4 7 34 35
15 3 07 527 513 511
22 3 07 527 000 413 slight wording change, but ok
25 3 07 527 515 515
40 3 07 527 517 517
54 1 19 527 000 513
63 3 07 527 517 517
79 3 07 527 517 517
81 3 07 527 515 515
066 THE GRAPH SHOWS THE DISTANCE TRAVELED BY A TRACTOR DURING A
 2 303 2 0 1 24 1 19 0 4 7 32 34 35
15 1 19 527 513 511
22 1 19 527 000 513
25 1 19 527 515 515
40 1 19 527 517 517
54 1 24 527 000 513
63 1 19 527 517 517
79 1 19 527 517 517
81 1 19 527 515 515
067 JOE HAD THREE TEST SCORES OF 78, 76 AND 74, WHILE MARY HAD
 3 304 2 1 1 7 2 9 0 4 7 08 34 35 44 46
15 2 09 527 513 511
22 2 09 527 000 513
25 2 09 527 515 515
40 2 09 527 517 517
54 1 07 527 000 513
63 2 09 527 517 517
79 2 09 527 517 517
81 2 09 527 515 515
068 THE DISTANCE BETWEEN TWO TOWNS IS USUALLY MEASURED IN
 5 401 1 0 1 31 0 29 0 5 5 03 36 38 39
15 2 18 527 513 511 0-29
22 0 29 527 423 423 "when using the metric system" deleted
25 0 29 527 523 523
40 3 15 527 517 517
54 1 31 527 000 513
63 0 29 527 527 527
79 0 29 527 527 527
81 0 29 527 523 523 PHRASE ADDED TO NAT -"WHEN USING METRIC SYSTEM
069 THE LENGTH OF AB IS 1 UNIT. WHICH IS THE BEST ESTIMATE FOR
 2 402 2 0 1 12 0 8 1 5 5 01 38 40
15 0 08 527 523 521

22 0 08 527 523 523
 25 0 08 527 523 523
 40 0 08 527 527 527
 54 1 12 527 523 513 2 28
 63 0 08 527 527 527
 79 0 08 527 527 527
 81 0 08 527 523 523
 070 WHAT IS THE AREA OF THE ABOVE PARALLELOGRAM?
 4 404 1 0 1 25 1 20 0 5 5 37 38 39
 15 1 20 527 513 511
 22 1 20 527 000 513
 25 1 20 527 515 515
 40 1 20 527 517 517
 54 1 25 527 523 513 2 27
 63 1 20 527 517 517
 79 1 20 527 517 517
 81 1 20 527 515 515
 071 THE RECTANGLE SHOWN ABOVE IS CUT ALONG THE DOTTED LINES, AND
 3 404 2 0 1 23 2 18 0 5 5 37 38 40
 15 0 29 527 523 521
 22 2 18 527 000 513
 25 2 18 527 515 515
 40 0 23 527 527 527
 54 1 23 527 523 513 1 17
 63 2 18 527 517 517
 79 2 18 527 517 517
 81 2 18 527 515 515 NAT TEXT HAS ADDED WORD "NEW"
 072 THE FIGURE ABOVE SHOWS A RECTANGULAR BOX. WHICH OF THE
 4 403 3 0 1 5 1 9 0 5 5 01 03 05 38 40
 15 1 09 527 513 511
 22 1 09 527 000 513
 25 1 09 527 515 515
 40 1 09 527 517 517
 54 1 05 527 523 513 1 20
 63 1 09 527 517 517
 79 1 09 527 517 517
 81 1 09 527 515 515
 073 162 * 45 IS EQUAL TO
 5 001 1 0 2 9 3 28 0 1 6 03 05 06 09 15 43
 15 3 28 527 513 511
 22 3 28 527 000 513
 25 3 28 527 515 515
 40 3 28 527 517 517
 54 2 09 527 000 513
 63 3 28 527 517 517
 79 3 28 527 517 517
 81 3 28 527 515 515
 074 (TRIANGULAR ARRAY OF 1'S) WHAT IS THE SUM OF THE 50TH ROW?
 1 001 4 0 2 8 1 17 0 1 6 09 15 16
 15 1 17 527 513 511
 22 1 17 527 000 513
 25 1 17 527 515 515
 40 1 17 527 517 517
 54 2 08 527 523 513 2 35
 63 1 17 527 517 517
 79 1 17 527 517 517
 81 1 17 527 515 515
 075 IN THE FIGURE THE LITTLE SQUARES ARE ALL THE SAME SIZE AND
 3 002 2 1 2 26 0 28 1 1 1 03 07 08 10 15 16
 15 0 28 527 523 521
 22 0 28 527 523 523

25 0 28 527 523 523
40 0 28 527 527 527
54 2 26 527 523 513 1 03
63 0 28 527 527 527
79 0 28 527 527 527
81 0 28 527 523 523

076 FOUR 1-LITER BOWLS OF ICE CREAM WERE SET OUT AT A PARTY.

5 002 3 0 2 27 0 4 0 1 1 10 15 16 44
15 3 03 527 513 511 0-4
22 0 04 527 523 523
25 0 04 527 523 523
40 2 35 527 517 517
54 2 27 527 000 513
63 0 04 527 527 527
79 0 04 527 527 527
81 0 04 527 523 523

077 THE POSITION ON THE SCALE INDICATED BY THE ARROW IS

2 003 2 0 2 23 1 18 0 1 1 01 03 12 15 16
15 1 18 527 513 511
22 1 18 527 000 513
25 1 18 527 515 515
40 1 18 527 517 517
54 2 23 527 000 513
63 1 18 527 517 517
79 1 18 527 517 517
81 1 18 527 515 515

078 A RUNNER RAN 3,000 METERS IN EXACTLY 8 MINUTES. WHAT WAS

2 003 3 1 2 12 4 3 0 1 1 05 08 12 15 16 46
15 4 03 527 513 511
22 4 03 527 000 513
25 4 03 527 515 515
40 4 03 527 517 517
54 2 12 527 523 513 1 04
63 4 03 527 517 517
79 4 03 527 517 517
81 4 03 527 515 515

079 A PAINTER IS TO MIX GREEN AND YELLOW PAINT IN THE RATIO OF

4 004 3 0 2 24 0 12 1 1 2 07 13 15 16 44
15 0 12 527 523 521
22 0 12 527 523 523
25 0 12 527 523 523
40 0 12 527 527 527
54 2 24 527 523 513 1 08
63 0 12 527 527 527
79 0 12 527 527 527
81 0 12 527 523 523

080 WHICH OF THESE NUMBERS IS A PRIME NUMBER?

3 005 1 0 2 11 2 20 0 1 2 06 15
15 2 20 527 513 511
22 2 20 527 000 513
25 2 20 527 515 515
40 2 20 527 517 517
54 2 11 527 523 513 2 31
63 2 20 527 517 517
79 2 20 527 517 517
81 2 20 527 515 515

081 SINCE $4 * 9 = 36$, THE SQUARE ROOT OF 36 IS EQUAL TO

4 008 2 0 2 22 3 33 0 1 2
15 3 33 527 513 511
22 3 33 527 000 513
25 3 33 527 515 515

40 3 33 527 517 517
 54 2 22 527 000 513
 63 3 33 527 517 517
 79 3 33 527 517 517
 81 3 33 527 515 515
 082 THE SET OF INTEGERS LESS THAN 5 IS REPRESENTED ON ONE OF THE
 1 101 2 0 2 34 4 5 0 2 3 17 20 21
 15 4 05 527 513 511
 22 4 05 527 000 513
 25 4 05 527 515 515
 40 4 05 527 517 517
 54 2 34 527 523 513 1 10
 63 4 05 527 517 517
 79 4 05 527 517 517
 81 4 05 527 515 515
 083 A, B, AND C ARE NUMBERS GREATER THAN 0. WHICH OF THESE IS
 5 102 2 0 2 13 0 0 0 2 3 20 21
 15 0 00 000 000 000
 22 0 00 000 000 000
 25 0 00 000 000 000
 40 0 00 000 000 000
 54 2 13 527 000 513
 63 0 00 000 000 000
 79 0 00 000 000 000
 81 0 00 000 000 000
 084 0.00046 IS EQUAL TO
 2 103 1 0 2 29 1 33 0 2 3
 15 1 35 527 513 511 1-33
 22 0 30 527 523 523 1-33 ON ORIGINAL FORM
 25 1 33 527 515 515
 40 0 30 527 527 527
 54 2 29 527 000 513
 63 1 33 527 517 517
 79 1 33 527 517 517
 81 1 33 527 515 515
 085 IF Y DOLLARS ARE SHARED EQUALLY AMONG FOUR BOYS, HOW MANY
 4 104 2 0 2 4 2 29 0 2 3 18 20 21 44
 15 2 29 527 513 511
 22 2 29 527 000 513
 25 2 29 527 515 515
 40 2 29 527 517 517
 54 2 04 527 000 513
 63 2 29 527 517 517
 79 2 29 527 517 517
 81 2 29 527 515 515
 086 IF $4X/12 = 0$, THEN X IS EQUAL TO
 1 106 1 1 2 1 0 18 1 2 3 04 08 19 20 45
 15 0 18 527 523 521
 22 0 18 527 523 523
 25 0 18 527 523 523
 40 0 18 527 527 527
 54 2 01 527 523 513 2 11
 63 0 18 527 527 527
 79 0 18 527 527 527
 81 0 18 527 523 523
 087 THE DAVIS FAMILY TOOK A CAR TRIP FROM ANABRU THROUGH BERGEN
 3 106 3 0 2 28 1 4 0 2 3 19 20 21 44 47
 15 1 04 527 513 511
 22 1 04 527 000 513
 25 1 04 527 515 515
 40 1 04 527 517 517

54 2 28 527 000 513
63 1 04 527 517 517
79 1 04 527 517 517
81 1 04 527 515 515
088 A/15 - B/5 IS EQUAL TO
1 105 1 0 2 5 3 35 0 2 3 20 4
15 3 35 527 513 511
22 3 35 527 000 513
25 3 35 527 515 515
40 3 35 527 517 517
54 2 05 527 000 513
63 3 35 527 517 517
79 3 35 527 517 517
81 3 35 527 515 515
089 AB // DC AND AD // BC. QUADRILATERAL ABCD IS A
2 201 2 0 2 16 2 21 0 3 4 22 26 29 31
15 2 21 527 513 511
22 2 21 000 000 513 teacher otl lost in data processing
25 2 21 527 515 515
40 2 21 527 517 517
54 2 16 527 000 513
63 2 21 527 517 517
79 2 21 527 517 517
81 2 21 527 515 515
090 THE LINE M IS A LINE OF SYMMETRY FOR FIGURE ABCDE. THE
3 202 1 0 2 15 2 6 0 3 4 23 26 28 29 30
15 2 06 527 513 511
22 2 06 527 000 513
25 2 06 527 515 515
40 2 06 527 517 517
54 2 15 527 000 513
63 2 06 527 517 517
79 2 06 527 517 517
81 2 06 527 515 515
091 ONE OF THE FOLLOWING FIGURES IS CONGRUENT WITH THE FIGURE
5 203 1 0 2 25 4 16 0 3 4 24 26 29 30
15 4 16 527 513 511
22 4 16 527 000 513
25 4 16 527 515 515
40 4 16 527 517 517
54 2 25 527 000 513
63 4 16 527 517 517
79 4 16 527 517 517
81 4 16 527 515 515 MODIFICATION IN NAT TEXT - "WITH" TO "IS"
092 IF TRIANGLE XYZ IS A TRIANGLE SIMILAR TO TRIANGLE ABC BUT
3 204 3 0 2 32 0 0 0 3 4 25 26 29 31
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 2 32 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000
093 WHICH OF THESE IS A CORRECT STATEMENT FOR THIS TRIANGLE?
1 206 1 0 2 3 2 25 0 3 4 29 30
15 2 25 527 513 511
22 2 25 527 000 513
25 2 25 527 515 515
40 2 25 527 517 517
54 2 03 527 000 513

63 2 25 527 517 517
79 2 25 527 517 517
81 2 25 527 515 515
094 IN THE DIAGRAM, OPQR IS A PARALLELOGRAM, O IS THE ORIGIN,
1 207 3 0 2 33 0 0 0 3 4 27 29 31
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 2 33 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000
095 WHICH STATEMENT CAN BE USED TO FIND THE VALUE OF Y?
4 208 2 0 2 6 0 0 0 3 4 29 31
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 2 06 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000
096 TRIANGLE ABC AND TRIANGLE A'B'C' ARE CONGRUENT AND THEIR
5 209 2 0 2 14 2 14 0 3 4 28 29 31
15 2 14 527 513 511
22 2 14 527 000 513
25 2 14 527 515 515
40 2 14 527 517 517
54 2 14 527 000 513
63 2 14 527 517 517
79 2 14 527 417 417 slight wording change, but ok
81 2 14 527 515 515
097 A TABLE SHOWS SCORES FOR A CLASS ON A 10-POINT TEST. HOW MANY
2 302 1 0 2 18 1 12 0 4 7 34 41
15 1 12 527 513 511
22 1 12 527 000 513
25 1 12 527 515 515
40 1 12 527 517 517
54 2 18 527 000 513
63 1 12 527 517 517
79 1 12 527 517 517
81 1 12 527 515 515
098 HERE IS A TABLE OF DATA AND A GRAPH OF THE SAME DATA. WHAT IS
4 303 2 0 2 31 4 8 0 4 7 32 34 35
15 4 08 527 513 511
22 4 08 527 000 513
25 4 08 527 515 515
40 4 08 527 517 517
54 2 31 527 000 513
63 4 08 527 517 517
79 4 08 527 517 517
81 4 08 527 515 515 MODIFICATION IN TEXT WORDING - "IS" TO "ARE"
099 IN THE GRAPH, RAINFALL IN CENTIMETERS IS PLOTTED FOR 13 WEEKS
2 304 4 1 2 19 3 27 0 4 7 08 34 35
15 3 27 527 513 511
22 3 27 527 000 513
25 3 27 527 515 515
40 3 27 527 517 517
54 2 19 527 523 513 2 40
63 3 27 527 517 517

79 3 27 527 517 517
81 3 27 527 515 515 GRAPH ILLUSTRATION DIFFERS SLIGHTLY
100 2 METERS + 3 MILLIMETERS IS EQUAL TO
2 401 1 0 2 2 0 1 0 5 5 03 36 38 39
15 3 15 527 513 511 0-1
22 0 01 527 523 523
25 0 01 527 523 523
40 3 17 527 517 517
54 2 02 527 000 513
63 0 01 527 527 527
79 0 01 527 527 527
81 0 01 527 523 523
101 A 15 CENTIMETER PIECE IS CUT FROM A RIBBON 1 METER LONG. WHAT
1 401 3 0 2 17 1 7 0 5 5 03 36 38 40
15 1 07 527 513 511
22 1 07 527 000 513
25 1 07 527 515 515
40 1 07 527 517 517
54 2 17 527 000 513
63 1 07 527 517 517
79 1 07 527 517 517
81 1 07 527 515 515
102 THE MEASURE OF THE ANGLE SHOWN IS NEAREST TO
4 402 2 0 2 30 2 17 0 5 5 01 38 40
15 2 17 527 513 511
22 2 17 527 000 513
25 2 17 527 515 515
40 2 17 527 517 517
54 2 30 527 000 513
63 2 17 527 517 517
79 2 17 527 517 517
81 2 17 527 515 515
103 A SQUARE IS REMOVED FROM THE RECTANGLE AS SHOWN. WHAT IS THE
3 404 3 0 2 21 0 23 0 5 5 03 05 37 38 40
15 3 17 527 513 511 0-23
22 0 23 527 523 523
25 0 23 527 523 523
40 2 18 527 517 517
54 2 21 527 000 513
63 0 23 527 527 527
79 0 23 527 527 527
81 0 23 527 523 523
104 MICHAEL HAS A LARGE NUMBER OF WOODED BLOCKS WHICH ARE CUBICAL
5 404 3 0 2 7 3 17 0 5 5 03 37 38 40 44
15 0 23 527 523 521 3-17
22 3 17 527 000 513
25 3 17 527 515 515
40 0 01 527 527 527
54 2 07 527 000 513
63 3 17 527 517 517
79 3 17 527 517 517
81 3 17 527 515 515
105 WHICH OF THE FOLLOWING IS (ARE) TRUE?
5 001 2 1 3 9 4 6 0 1 6 02 05 08 09 15 16
15 4 06 527 513 511
22 4 06 527 000 513
25 4 06 527 515 515
40 4 06 527 517 517
54 3 09 527 000 513
63 4 06 527 517 517
79 4 06 527 517 517

81 4 06 527 515 515

106 PETER AND PAUL DECIDED TO START SAVING MONEY. PETER CAN SAVE
4 001 3 1 3 31 1 32 0 1 6 03 07 08 09 15 16 44 46

15 1 32 527 513 511

22 1 32 527 000 513

25 1 32 527 515 515

40 1 32 527 517 517

54 3 31 527 000 513

63 1 32 527 517 517

79 1 32 527 517 517

81 1 32 527 515 515

107 1 2/5 - 1/2 IS EQUAL TO
2 002 1 0 3 16 3 5 0 1 1 03 06 10 11 15

15 3 05 527 513 511

22 3 05 527 000 513

25 3 05 527 515 515

40 3 05 527 517 517

54 3 16 527 000 513

63 3 05 527 517 517

79 3 05 527 517 517

81 3 05 527 515 515

108 .004)24.56 IN THE DIVISION ABOVE, THE CORRECT ANSWER IS
5 003 1 1 3 4 1 21 0 1 1 03 05 06 08 12 15 43 45

15 1 21 527 513 511

22 1 21 000 000 513 teacher otl lost in data processing

25 1 21 527 515 515

40 1 21 527 517 517

54 3 04 527 523 513 2 01

63 1 21 527 517 517

79 1 21 527 517 517

81 1 21 527 515 515

109 IN A DISCUS-THROWING COMPETITION, THE WINNING THROW WAS 61.60
2 003 3 0 3 12 0 20 0 1 1 03 05 12 15 16 44

15 2 07 527 513 511 0-20

22 0 20 527 523 523

25 0 20 527 523 523

40 2 10 527 517 517

54 3 12 527 000 513

63 0 20 527 527 527

79 0 20 527 527 527

81 0 20 527 523 523

110 IN A SCHOOL ELECTION WITH THREE CANDIDATES, JOE RECEIVED 120
3 004 3 0 3 20 4 14 0 1 2 07 14 15 16 44

15 4 14 527 513 511

22 4 14 527 000 513

25 4 14 527 515 515

40 4 14 527 517 517

54 3 20 527 523 513 2 08

63 4 14 527 517 517

79 4 14 527 517 517

81 4 14 527 515 515

111 WHICH OF THE FOLLOWING EQUALS $7 * (3 + 9)$?
1 005 2 1 3 33 4 28 0 1 2 08 15 16 45

15 4 28 527 513 511

22 4 28 527 000 513

25 4 28 527 515 515

40 4 28 527 517 517

54 3 33 527 000 513

63 4 28 527 517 517

79 4 28 527 517 517

81 4 28 527 515 515

112 $3.23 \times 10^{**5}$ IS EQUAL TO
4 006 1 0 3 22 3 21 0 1 2 06 15
15 3 21 527 513 511
22 3 21 000 000 513 teacher otl lost in data processing
25 3 21 527 515 515
40 3 21 527 517 517
54 3 22 527 000 513
63 3 21 527 517 517
79 3 21 527 517 517
81 3 21 527 515 515

113 $(-6) - (-8)$ IS EQUAL TO
2 101 1 2 3 23 2 30 0 2 3 04 05 17 20 42 43
15 2 30 527 513 511
22 2 30 527 000 513
25 2 30 527 515 515
40 2 30 527 517 517
54 3 23 527 523 513 1 09
63 2 30 527 517 517
79 2 30 527 517 517
81 2 30 527 515 515

114 THE FIRST ERROR, IF ANY, IN THIS REASONING OCCURS IN
3 101 4 0 3 1 0 0 0 2 3 17 20 21
15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 3 01 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

115 IF $X = -3$, THE VAUE OF $-3X$ IS
5 104 1 1 3 32 1 26 0 2 3 04 08 18 20 43 45
15 1 26 527 513 511
22 1 26 527 000 513
25 1 26 527 515 515
40 1 26 527 517 517
54 3 32 527 000 513
63 1 26 527 517 517
79 1 26 527 517 517
81 1 26 527 515 515

116 IF $X = Y = Z = 1$, THEN $(X - Z) / (X + Y)$ IS EQUAL TO
3 104 1 1 3 15 3 16 0 2 3 04 08 18 20 45
15 3 16 527 513 511
22 3 16 527 000 513
25 3 16 527 515 515
40 3 16 527 517 517
54 3 15 527 000 513
63 3 16 527 517 517
79 3 16 527 517 517
81 3 16 527 515 515

117 'SIX TIMES A CERTAIN NUMBER (CALL IT Q) EQUALS THE SUM OF
4 106 2 0 3 28 3 13 0 2 3 19 20 21
15 3 13 527 513 511
22 3 13 527 000 513
25 3 13 527 515 515
40 3 13 527 517 517
54 3 28 527 000 513
63 3 13 527 517 517
79 3 13 527 517 517
81 3 13 527 515 515

118 $(X/2) < 7$ IS EQUIVALENT TO

3 106 1 1 3 34 4 26 0 2 3 02 04 08 19 20 43 45
 15 4 26 527 513 511
 22 4 26 527 000 513
 25 4 26 527 515 515
 40 4 26 527 517 517
 54 3 34 527 000 513
 63 4 26 527 517 517
 79 4 26 527 517 517
 81 4 26 527 515 515
 119 IF $Y = 2X - 5$ AND $X = 2$, THEN $Y =$
 4 107 1 0 3 17 0 0 0 2 3 04 20
 15 0 00 000 000 000
 22 0 00 000 000 000
 25 0 00 000 000 000
 40 0 00 000 000 000
 54 3 17 527 000 513
 63 0 00 000 000 000
 79 0 00 000 000 000
 81 0 00 000 000 000
 120 THE SYMBOL P INTERSECT Q REPRESENTS THE INTERSECTION OF SETS
 2 110 2 1 3 21 4 17 0 2 3 02 08 20 21
 15 4 17 527 513 511
 22 4 17 527 000 513
 25 4 17 527 515 515
 40 4 17 527 517 517
 54 3 21 527 523 513 2 13
 63 4 17 527 517 517
 79 4 17 527 417 417 "represents" -> "presents"
 81 4 17 527 515 515 ALTERNATIVE "E" DIFFERS
 121 WHICH OF THE INDICATED ANGLES IS ACUTE?
 1 201 1 0 3 18 0 17 1 3 4 22 26 29 30
 15 0 17 527 523 521
 22 0 17 527 523 523
 25 0 17 527 523 523
 40 0 17 527 527 527
 54 3 18 527 000 513
 63 0 17 527 527 527
 79 0 17 527 527 527
 81 0 17 527 523 523
 122 (TRIANGLE WITH 2 ANGLES GIVEN) X IS EQUAL TO
 5 202 2 0 3 30 0 22 0 3 4 23 26 29 31
 15 2 11 527 513 511 0-22
 22 0 22 527 523 523
 25 0 22 527 523 523
 40 4 18 527 517 517
 54 3 30 527 000 513
 63 0 22 527 527 527
 79 0 22 527 527 527
 81 0 22 527 523 523
 123 IN A QUADRILATERAL, TWO OF THE ANGLES EACH HAVE MEASURE OF
 1 202 3 0 3 27 4 24 0 3 4 23 26 29 31
 15 4 24 527 513 511
 22 4 24 527 000 513
 25 4 24 527 515 515
 40 4 24 527 517 517
 54 3 27 527 000 513
 63 4 24 527 517 517
 79 4 24 527 517 517
 81 4 24 527 515 515
 124 IF THE TRIANGLES ABOVE ARE CONGRUENT AND M ANGLE A =
 1 203 2 0 3 26 0 0 0 3 4 24 26 29 31

15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 3 26 527 523 513 2 20
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

125 IF TWO TRIANGLES ARE SIMILAR, WHICH OF THE FOLLOWING

1 204 2 0 3 7 3 9 0 3 4 25 26 29 31
15 3 09 527 513 511
22 3 09 527 000 513
25 3 09 527 515 515
40 3 09 527 517 517
54 3 07 527 000 513
63 3 09 527 517 517
79 3 09 527 517 517
81 3 09 527 515 515

126 THE STRAIGHT LINE JOINING THE POINTS (2,3) AND (2,7) CUTS

5 207 2 0 3 13 4 4 0 3 4 27 29 31 47
15 4 04 527 513 511
22 4 04 527 000 513
25 4 04 527 515 515
40 4 04 527 517 517
54 3 13 527 000 513
63 4 04 527 517 517
79 4 04 527 517 517
81 4 04 527 515 515

127 IN THE ABOVE DIAGRAM, TRIANGLES ABC AND DEF ARE CONGRUENT,

4 208 3 0 3 25 0 21 1 3 4 28 29 31
15 0 21 527 523 521
22 0 21 000 523 523
25 0 21 527 523 523
40 0 21 527 527 527
54 3 25 527 000 513
63 0 21 527 527 527
79 0 21 527 527 527
81 0 21 527 523 523

teacher otl lost in data processing

128 IF, IN THE GIVEN FIGURE, PQ AND RS ARE INTERSECTING STRAIGHT

3 202 3 1 3 19 3 34 0 3 4 08 23 26 29 31
15 3 34 527 513 511
22 3 34 527 000 513
25 3 34 527 515 515
40 3 34 527 517 517
54 3 19 527 000 513
63 3 34 527 517 517
79 3 34 527 517 517
81 3 34 527 515 515

129 THERE ARE 7,000,000 GIRLS UNDER THE AGE OF 21 IN A COUNTRY

4 303 3 0 3 10 2 4 0 4 7 32 34 35
15 2 04 527 513 511
22 2 04 527 000 513
25 2 04 527 515 515
40 2 04 527 517 517
54 3 10 527 523 513 2 39
63 2 04 527 517 517
79 2 04 527 517 517
81 2 04 527 515 515

130 THE WEIGHT GAIN FROM 6 TO 10 MONTHS WAS

2 304 1 0 3 2 4 35 0 4 7 03 34 41
15 4 35 527 513 511

22 4 35 527 000 513
 25 4 35 527 515 515
 40 4 35 527 517 517
 54 3 02 527 000 513
 63 4 35 527 517 517
 79 4 35 527 517 517
 81 4 35 527 515 515
 131 THE PETALS ON 100 FLOWERS OF DIFFERENT KINDS WERE CAREFULLY
 4 302 2 0 3 14 2 3 0 4 7 34 35
 15 2 03 527 513 511
 22 2 03 527 000 513
 25 2 03 527 515 515
 40 2 03 527 517 517
 54 3 14 527 000 513
 63 2 03 527 517 517
 79 2 03 527 517 517
 81 2 03 527 515 515
 132 A TEAM SCORES AN AVERAGE OF 3 POINTS PER GAME OVER 5 GAMES.
 5 304 1 0 3 8 1 11 0 4 7 07 34 41
 15 1 11 527 513 511
 22 1 11 527 000 513
 25 1 11 527 515 515
 40 1 11 527 517 517
 54 3 08 527 000 513
 63 1 11 527 517 517
 79 1 11 527 517 517
 81 1 11 527 515 515
 133 HOW MANY PIECES OF PIPE EACH 20 METERS LONG WOULD BE REQUIRED
 2 401 3 0 3 5 4 23 0 5 5 03 05 36 38 40
 15 4 23 527 513 511
 22 4 23 527 000 513
 25 4 23 527 515 515
 40 4 23 527 517 517
 54 3 05 527 000 513
 63 4 23 527 517 517
 79 4 23 527 517 517
 81 4 23 527 515 515
 134 EACH OF THE SMALL SQUARES IN THE FIGURE IS 1 SQUARE UNIT.
 3 402 3 0 3 29 4 7 0 5 5 01 38 40
 15 4 07 527 513 511
 22 4 07 527 000 513
 25 4 07 527 515 515
 40 4 07 527 517 517
 54 3 29 527 000 513
 63 4 07 527 517 517
 79 4 07 527 517 517
 81 4 07 527 515 515
 135 THE LENGTH OF A BOX WAS MEASURED AND FOUND TO BE 9 CM TO THE
 5 403 2 0 3 11 2 31 0 5 5 01 38 40
 15 2 31 527 513 511
 22 2 31 527 000 513
 25 2 31 527 515 515
 40 2 31 527 517 517
 54 3 11 527 000 513
 63 2 31 527 517 517
 79 2 31 527 517 517
 81 2 31 527 515 515
 136 WHAT IS THE CAPACITY OF A CUBIC CONTAINER 10 CM BY 10 CM BY
 1 404 2 0 3 6 3 15 0 5 5 03 37 38 40
 15 0 01 527 523 521
 22 3 15 527 000 513

25 3 15 527 515 515
40 0 29 527 527 527
54 3 06 527 000 513
63 3 15 527 517 517
79 3 15 527 517 517
81 3 15 527 515 515

137 WHICH OF THE FOLLOWING OPERATIONS WITH WHOLE NUMBERS WILL

4 001 2 1 4 22 2 15 0 1 6 02 05 08 09 15 16
15 2 15 527 513 511
22 2 15 527 000 513
25 2 15 527 515 515
40 2 15 527 517 517
54 4 22 527 523 513 2 33
63 2 15 527 517 517
79 2 15 527 517 517
81 2 15 527 515 515

138 A GROUP OF CHILDREN WAS DIVIDED INTO 7 TEAMS WITH NINE IN

3 001 3 2 4 14 3 8 0 1 6 03 09 15 16 42 44
15 3 08 527 513 511
22 3 08 527 000 513
25 3 08 527 515 515
40 3 08 527 517 517
54 4 14 527 000 513
63 3 08 527 517 517
79 3 08 527 517 517
81 3 08 527 515 515

139 $(3/5)/(2/7)$ IS EQUAL TO

1 002 1 0 4 15 2 10 0 1 1 03 06 10 11 15
15 0 26 527 523 521 2-10
22 2 10 527 000 513
25 2 10 527 515 515
40 0 20 527 527 527
54 4 15 527 523 513 2 02
63 2 10 527 517 517
79 2 10 527 517 517
81 2 10 527 515 515 EQUATION REPRESENTATION DIFFERS

140 $7 \frac{3}{20}$ IS EQUAL TO

2 003 1 0 4 6 0 32 1 1 1 03 05 06 12 15 43
15 0 32 527 523 521
22 0 32 527 523 523
25 0 32 527 523 523
40 0 32 527 527 527
54 4 06 527 000 513
63 0 32 527 527 527
79 0 32 527 527 527
81 0 32 527 523 523

141 THE SPEED OF SOUND IS APPROXIMATELY 340 METERS PER SECOND.

2 003 3 0 4 3 3 22 0 1 1 05 07 12 15 16 44
15 3 22 527 513 511
22 3 22 527 000 413
25 3 22 527 515 515
40 3 22 527 517 517
54 4 03 527 000 513
63 3 22 527 517 517
79 3 22 527 517 517
81 3 22 527 515 515 NATIONAL MISSING WORD "APPROXIMATELY"

142 THE TABLE ABOVE SHOWS THE VALUES OF X AND Y, WHERE X IS

5 004 2 0 4 26 1 16 0 1 2 07 13 15 16
15 1 16 527 513 511
22 1 16 527 000 513
25 1 16 527 515 515

40 1 16 527 517 517
 54 4 26 527 523 513 1 07
 63 1 16 527 517 517
 79 1 16 527 517 517
 81 1 16 527 515 515
 143 IF THERE ARE 300 CALORIES IN 100 GRAMS OF A CERTAIN FOOD,
 1 004 3 0 4 7 2 23 0 1 2 03 07 13 15 16
 15 2 23 527 513 511
 22 2 23 527 000 513
 25 2 23 527 515 515
 40 2 23 527 517 517
 54 4 07 527 523 513 2 07
 63 2 23 527 517 517
 79 2 23 527 517 517
 81 2 23 527 515 515
 144 ONE BELL RINGS EVERY 8 MINUTES, A SECOND BELL RINGS EVERY 12
 4 005 4 2 4 16 3 19 0 1 2 15 16 42 44
 15 3 19 527 513 511
 22 3 19 527 000 413 "they both" -> "the both" typo
 25 3 19 527 515 515
 40 3 19 527 517 517
 54 4 16 527 000 513
 63 3 19 527 517 517
 79 3 19 527 517 517
 81 3 19 527 515 515
 145 THE SQUARE ROOT OF 75 IS BETWEEN
 5 008 2 0 4 13 2 33 0 1 2 05
 15 2 33 527 513 511
 22 2 33 527 000 513
 25 2 33 527 515 515
 40 2 33 527 517 517
 54 4 13 527 000 513
 63 2 33 527 517 517
 79 2 33 527 517 517
 81 2 33 527 515 515
 146 FIND THE SUM: 3 WEEKS 5 DAYS + 9 WEEKS 6 DAYS
 4 009 1 0 4 5 4 10 0 1 2 03 06 15
 15 4 10 527 513 511
 22 4 10 527 000 513
 25 4 10 527 515 515
 40 4 10 527 517 517
 54 4 05 527 000 513
 63 4 10 527 517 517
 79 4 10 527 517 517
 81 4 10 527 515 515
 147 $(-3/4) - (-1/8) =$
 2 102 1 0 4 12 0 0 0 2 3 20 4
 15 0 00 000 000 000
 22 0 00 000 000 000
 25 0 00 000 000 000
 40 0 00 000 000 000
 54 4 12 527 000 513
 63 0 00 000 000 000
 79 0 00 000 000 000
 81 0 00 000 000 000
 148 WHICH OF THE FOLLOWING IS FALSE WHEN A, B, AND C ARE
 5 104 2 2 4 19 3 24 0 2 3 02 08 18 20 21
 15 3 24 527 513 511
 22 3 24 527 000 513
 25 3 24 527 515 515
 40 3 24 527 517 517

54 4 19 527 000 513
63 3 24 527 517 517
79 3 24 527 517 517
81 3 24 527 515 515

149 A SHOPKEEPER HAS X KG OF TEA IN STOCK. HE SELLS 15 KG AND

3 104 3 1 4 31 0 27 0 2 3 08 18 20 21 44 46
0-27

15 2 12 527 513 511
22 0 27 527 523 523
25 0 27 527 523 523
40 2 12 527 517 517
54 4 31 527 000 513
63 0 27 527 527 527
79 0 27 527 527 527
81 0 27 527 523 523

150 $12X + 16Y =$

2 105 1 0 4 10 0 0 0 2 3 04 20

15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 4 10 527 000 513
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

151 IF $5X + 4 = 4X - 31$, THEN X IS EQUAL TO

1 106 1 0 4 30 0 3 1 2 3 04 19 20 43

15 0 03 527 523 521
22 0 03 527 523 523
25 0 03 527 523 523
40 0 03 527 527 527
54 4 30 527 000 513
63 0 03 527 527 527
79 0 03 527 527 527
81 0 03 527 523 523

152 A BOWLING BALL TRAVELS 4 METERS PER SECOND. THE DISTANCE IN

3 107 1 0 4 21 3 26 0 2 3 04 20

15 3 26 527 513 511
22 3 26 527 000 513
25 3 26 527 515 515
40 3 26 527 517 517
54 4 21 527 000 513
63 3 26 527 517 517
79 3 26 527 517 517
81 3 26 527 515 515

153 THERE ARE 227 BOYS IN A SCHOOL. EVERY BOY IN THE SCHOOL

5 110 4 2 4 9 0 0 0 2 3 20 21 42

15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 4 09 527 523 513 2 17
63 0 00 000 000 000
79 0 00 000 000 000
81 0 00 000 000 000

154 FOUR IDENTICAL EQUILATERAL TRIANGLES HAVE BEEN ARRANGED AS

2 201 3 0 4 4 0 0 0 3 4 22 26 29 31

15 0 00 000 000 000
22 0 00 000 000 000
25 0 00 000 000 000
40 0 00 000 000 000
54 4 04 527 000 513

63 0 00 000 000 000
 79 0 00 000 000 000
 81 0 00 000 000 000
 155 IF AB IS A STRAIGHT LINE, WHAT IS THE MEASURE IN DEGREES OF
 4 202 3 1 4 2 4 19 0 3 4 08 23 26 29 31
 15 4 19 527 513 511
 22 4 19 527 000 513
 25 4 19 527 515 515
 40 4 19 527 517 517
 54 4 02 527 523 513 2 23
 63 4 19 527 517 517
 79 4 19 527 517 517
 81 4 19 527 515 515
 156 TRIANGLES PQR AND STU ARE SIMILAR. HOW LONG IS SU?
 3 204 3 0 4 29 0 40 0 3 4 07 25 26 29 31
 15 4 18 527 513 511 0-40
 22 0 40 527 523 523
 25 0 40 527 523 523
 40 1 08 527 517 517
 54 4 29 527 000 513
 63 0 40 527 527 527
 79 0 40 527 527 527
 81 0 40 527 523 523
 157 IF TRIANGLE PRS MAPS ONTO TRIANGLE PR'S UNDER A REFLECTION
 5 208 2 0 4 25 0 0 0 3 4 28 29 31
 15 0 00 000 000 000
 22 0 00 000 000 000
 25 0 00 000 000 000
 40 0 00 000 000 000
 54 4 25 527 000 513
 63 0 00 000 000 000
 79 0 00 000 000 000
 81 0 00 000 000 000
 158 TRIANGLE PQT CAN BE ROTATED (TURNED) ONTO TRIANGLE SQR. THE
 2 209 3 0 4 32 3 32 0 3 4 28 29 31
 15 3 32 527 513 511
 22 3 32 527 000 513
 25 3 32 527 515 515
 40 3 32 527 517 517
 54 4 32 527 000 513
 63 3 32 527 517 517
 79 3 32 527 517 517
 81 3 32 527 515 515
 159 THE FIGURE ABOVE SHOWS A WOODEN CUBE WITH ONE CORNER CUT OFF
 5 212 2 0 4 1 1 15 0 3 4 29 31
 15 1 15 527 513 511
 22 1 15 527 000 513
 25 1 15 527 515 515
 40 1 15 527 517 517
 54 4 01 527 523 513 2 21
 63 1 15 527 517 517
 79 1 15 527 517 517
 81 1 15 527 515 515
 160 THREE HOURS AFTER STARTING, CAR A IS HOW MANY KM AHEAD OF CAR
 4 303 2 2 4 33 3 10 0 4 7 08 32 34 35
 15 3 10 527 513 511
 22 3 10 527 000 513
 25 3 10 527 515 515
 40 3 10 527 517 517
 54 4 33 527 523 513 2 36
 63 3 10 527 517 517

79 3 10 527 517 517
 81 3 10 527 515 515
 161 HOW MUCH LONGER DOES IT TAKE FOR CAR B TO GO 50 KILOMETERS
 1 303 2 2 4 34 2 19 0 4 7 08 32 34 35
 15 2 19 527 513 511
 22 2 19 527 000 513
 25 2 19 527 515 515
 40 2 19 527 517 517
 54 4 34 527 523 513 2 37
 63 2 19 527 517 517
 79 2 19 527 517 517
 81 2 19 527 515 515
 162 THE GRAPH SHOWS THE TIME OF TRAVEL BY PUPILS FROM HOME TO
 3 304 2 0 4 23 4 11 0 4 7 03 34 35
 15 4 11 527 513 511
 22 4 11 527 000 513
 25 4 11 527 515 515
 40 4 11 527 517 517
 54 4 23 527 523 513 2 38
 63 4 11 527 517 517
 79 4 11 527 517 517
 81 4 11 527 515 515
 163 THERE ARE FIVE BLACK BUTTONS AND ONE RED BUTTON IN A JAR. IF
 2 306 1 0 4 11 3 6 0 4 7 34 41
 15 3 06 527 513 511
 22 3 06 527 000 513
 25 3 06 527 515 515
 40 3 06 527 517 517
 54 4 11 527 000 513
 63 3 06 527 517 517
 79 3 06 527 517 517
 81 3 06 527 515 515
 164 ACCORDING TO THE SCALE SHOWN, THE LENGTH OF SIDE BC OF A
 1 402 1 0 4 8 4 30 0 5 5 01 03 38 39
 15 4 30 527 513 511
 22 4 30 527 000 513
 25 4 30 527 515 515
 40 4 30 527 517 517
 54 4 08 527 000 513
 63 4 30 527 517 517
 79 4 30 527 517 517
 81 4 30 527 515 515
 165 WHICH OF THE FOLLOWING IS THE CLOSEST APPROX. TO THE AREA OF
 4 403 2 0 4 28 0 5 1 5 5 01 03 05 38 40
 15 0 05 527 523 521
 22 0 05 527 523 523
 25 0 05 527 523 523
 40 0 05 527 527 527
 54 4 28 527 000 513
 63 0 05 527 527 527
 79 0 05 527 527 527
 81 0 05 527 523 523
 166 WHAT IS THE SURFACE AREA OF THIS SOLID RECTANGULAR BOX?
 5 404 1 0 4 18 3 20 0 5 5 03 37 38 39
 15 3 20 527 513 511
 22 3 20 527 000 513
 25 3 20 527 515 515
 40 3 20 527 517 517
 54 4 18 527 000 513
 63 3 20 527 517 517
 79 3 20 527 517 517

81 3 20 527 515 515
167 THE AREA OF THE SHADED FIGURE, TO THE NEAREST SQUARE UNIT, IS
4 402 3 0 4 20 0 6 1 5 5 01 38 40
15 0 06 527 523 521
22 0 06 527 523 523
25 0 06 527 523 523
40 0 06 527 527 527
54 4 20 527 523 513 1 19
63 0 06 527 527 527
79 0 06 527 527 527
81 0 06 527 523 523
168 A SOLID PLASTIC CUBE WITH EDGES 1 CM LONG WEIGHS 1 GRAM.
1 404 4 0 4 17 0 10 1 5 5 37 38 40
15 0 10 527 523 521
22 0 10 527 523 523
25 0 10 527 523 523
40 0 10 527 527 527
54 4 17 527 523 513 2 30
63 0 10 527 527 527
79 0 10 527 527 527
81 0 10 527 523 523
169 SUPPOSE YOU START AT POINT M(-1,-1), MOVE A DISTANCE OF ONE
3 207 2 0 1 8 3 11 0 3 4 27 28 29 31
15 3 11 527 513 511
22 3 11 527 000 513
25 3 11 527 515 515
40 3 11 527 517 517
54 1 08 527 000 513
63 3 11 527 517 517
79 3 11 527 517 517
81 3 11 527 515 515
170 GIVEN VECTOR V AND VECTOR W AS SHOWN IN THE FIGURE ABOVE,
2 215 3 0 4 27 4 18 0 3 4 29 31
15 0 40 527 523 521 4-18
22 4 18 527 000 513
25 4 18 527 515 515
40 0 22 527 527 527
54 4 27 527 000 513
63 4 18 527 517 517
79 4 18 527 517 517
81 4 18 527 515 515
171 IF D IS THE DIRECTION OF PROJECTION AND A IS THE AXIS OF
2 215 2 0 2 20 1 8 0 3 4 29 31
15 0 11 527 523 521 1-8
22 1 08 527 000 513
25 1 08 527 515 515
40 0 40 527 527 527
54 2 20 527 000 513
63 1 08 527 517 517
79 1 08 527 517 517
81 1 08 527 515 515
172 FIND THE VALUE OF N. $N = 10^{**3} + 10^{**1} + 10^{**0} + 10^{**(-2)}$
3 103 2 0 3 24 2 22 0 2 3 20 21
15 2 22 527 513 511
22 2 22 527 000 513
25 2 22 527 515 515
40 2 22 527 517 517
54 3 24 527 000 513
63 2 22 527 517 517
79 2 22 527 517 517
81 2 22 527 515 515

173 U AND V ARE TWO VECTORS. WHICH FIGURE BELOW REPRESENTS $U - V$?

4 215 1 0 1 6 2 11 0 3 4 29 30
15 0 22 527 523 521 2-11
22 2 11 527 000 513
25 2 11 527 515 515
40 2 11 527 517 517
54 1 06 527 000 513
63 2 11 527 517 517
79 2 11 527 517 517
81 2 11 527 515 515

174 A HALF-TURN ABOUT O IS APLIED TO THE FIGURE ABOVE. WHICH OF

4 215 2 0 4 24 4 22 0 3 4 28 29 31
15 4 22 527 513 511
22 4 22 527 000 513
25 4 22 527 515 515
40 0 07 527 527 527
54 4 24 527 523 513 2 22
63 4 22 527 517 517
79 4 22 527 517 517
81 4 22 527 515 515

TEXT WORDING DIFFERS - "180 DEG" ADDED TO NAT

175 ON A NUMBER LINE TWO POINTS A AND B ARE GIVEN. THE COORDINATE

5 207 2 0 3 3 0 11 0 3 4 27 29 31
15 1 08 527 513 511 0-11
22 0 11 527 523 523
25 0 11 527 523 523
40 0 11 527 527 527
54 3 03 527 000 513
63 0 11 527 527 527
79 0 11 527 527 527
81 0 11 527 523 523

176 AMONG THE FOLLOWING LINES D1, D2, D3, D4, D5, WHICH HAS NO

2 205 3 0 2 10 1 14 0 3 4 29 31
15 1 14 527 513 511
22 1 14 527 000 513
25 1 14 527 515 515
40 1 14 527 517 517
54 2 10 527 000 513
63 1 14 527 517 517
79 1 14 527 517 517
81 1 14 527 515 515

177 CANDIDATE A RECEIVED 70 PERCENT OF THE VOTES CAST IN AN

3 004 3 0 0 0 3 14 0 1 2 03 05 07 14 15 16
15 3 14 527 513 511
22 3 14 527 000 513
25 3 14 527 515 515
40 3 14 527 517 517
54 0 00 000 000 000
63 3 14 527 517 517
79 3 14 527 517 517
81 3 14 527 515 515

178 72% IS EQUAL TO

5 004 1 0 0 0 2 1 0 1 2 03 06 14 15 43
15 2 01 527 513 511
22 2 01 527 000 513
25 2 01 527 515 515
40 2 01 527 517 517
54 0 00 000 000 000
63 2 01 527 517 517
79 2 01 527 517 517
81 2 01 527 515 515

179 WHAT IS 20 AS A PERCENT OF 80?

3 004 1 0 0 0 0 34 1 1 2 03 06 14 15

15 0 34 527 523 521

22 0 34 527 423 423

25 0 34 527 523 523

40 0 34 527 527 527

54 0 00 000 000 000

63 0 34 527 527 527

79 0 34 527 527 527

81 0 34 527 523 523

TEXT WORDING MODIFIED

180 \$150 IS DIVIDED IN THE RATIO OF 2 TO 3. THE SMALLER OF THE

3 004 2 0 0 0 4 32 0 1 2 07 13 15 16

15 4 32 527 513 511

22 4 32 527 000 513

25 4 32 527 515 515

40 4 32 527 517 517

54 0 00 000 000 000

63 4 32 527 517 517

79 4 32 527 517 517

81 4 32 527 515 515

181 A MODEL BOAT IS BUILT TO SCALE SO THAT IT IS 1/10 AS LONG AS

2 004 3 0 0 0 0 14 0 1 2 07 13 15 16

15 3 18 527 513 511 0-14

22 0 14 527 523 523

25 0 14 527 523 523

40 3 18 527 517 517

54 0 00 000 000 000

63 0 14 527 527 527

79 0 14 527 527 527

81 0 14 527 523 523

182 WHICH OF THE FOLLOWING IS THIRTY-SEVEN THOUSANDTHS?

4 003 1 0 0 0 2 2 0 1 1 03 06 12 15

15 2 02 527 513 511

22 2 02 527 000 513

25 2 02 527 515 515

40 2 02 527 517 517

54 0 00 000 000 000

63 2 02 527 517 517

79 2 02 527 517 517

81 2 02 527 515 515

183 74.236 ROUNDED TO THE NEAREST HUNDREDTH IS

4 003 2 0 0 0 3 25 0 1 1 01 12 15 16

15 3 25 527 513 511

22 3 25 527 000 513

25 3 25 527 515 515

40 3 25 527 517 517

54 0 00 000 000 000

63 3 25 527 517 517

79 3 25 527 517 517

81 3 25 527 515 515

184 THE LARGE SQUARE HAS AREA 1 SQUARE UNIT. THE AREA OF THE

3 003 2 0 0 0 2 27 0 1 1 03 12 15 16

15 2 27 527 513 511

22 2 27 527 000 513

25 2 27 527 515 515

40 2 27 527 517 517

54 0 00 000 000 000

63 2 27 527 517 517

79 2 27 527 517 517

81 2 27 527 515 515

185 WHICH IS THE CLOSEST ESTIMATE FOR THE ANSWER TO $5 \frac{3}{7} + 6 \frac{5}{8}$

3 002 2 0 0 0 1 3 0 1 1 01 10 15 16

15 1 03 527 513 511
22 1 03 527 000 513
25 1 03 527 515 515
40 1 03 527 517 517
54 0 00 000 000 000
63 1 03 527 517 517
79 1 03 527 517 517
81 1 03 527 515 515
186 $1/2 * 1/4$ IS EQUAL TO
1 002 1 0 0 0 4 25 0 1 1 03 06 10 11 15 43
15 4 25 527 513 511
22 4 25 527 000 513
25 4 25 527 515 515
40 4 25 527 517 517
54 0 00 000 000 000
63 4 25 527 517 517
79 4 25 527 517 517
81 4 25 527 515 515
187 $3/8 - 1/5$ IS EQUAL TO
2 002 1 0 0 0 1 13 0 1 1 03 06 10 11 15
15 1 13 527 513 511
22 1 13 527 000 513
25 1 13 527 515 515
40 1 13 527 517 517
54 0 00 000 000 000
63 1 13 527 517 517
79 1 13 527 517 517
81 1 13 527 515 515
188 THE PICTURE SHOWS SOME BLACK AND SOME WHITE MARBLES. OF ALL
4 002 1 0 0 0 4 1 0 1 1 03 06 10 11 15
15 4 01 527 513 511
22 4 01 527 000 513
25 4 01 527 515 515
40 4 01 527 517 517
54 0 00 000 000 000
63 4 01 527 517 517
79 4 01 527 517 517
81 4 01 527 515 515
189 $1/5$ IS EQUAL TO
4 004 1 0 0 0 0 2 0 1 2 03 06 14 15 43
15 0 02 527 523 521
22 0 02 527 523 523
25 0 02 527 523 523
40 0 02 527 527 527
54 0 00 000 000 000
63 0 02 527 527 527
79 0 02 527 527 527
81 0 02 527 523 523
190 CLOTH IS SOLD BY THE SQUARE METER. IF 6 SQUARE METERS OF
1 004 3 0 0 0 0 24 0 1 2 05 07 13 15 16
15 1 23 527 513 511 0-24
22 0 24 527 523 523
25 0 24 527 523 523
40 1 23 527 517 517
54 0 00 000 000 000
63 0 24 527 527 527
79 0 24 527 527 527
81 0 24 527 523 523
191 THE PRICE OF AN ARTICLE WAS \$100. THE PRICE WAS FIRST
2 004 3 0 0 0 1 23 0 1 2 05 07 14 15 16
15 0 24 527 523 521 1-23

25 2 32 527 515 515
40 2 32 527 517 517
54 0 00 000 000 000
63 2 32 527 517 517
79 2 32 527 517 517
81 2 32 527 515 515

198 WHICH OF THE FOLLOWING PATTERNS CAN BE FOLDED ALONG THE
3 212 4 0 0 0 3 4 0 3 4 29 31

15 3 04 527 513 511
22 3 04 527 000 513
25 3 04 527 515 515
40 3 04 527 517 517
54 0 00 000 000 000
63 3 04 527 517 517
79 3 04 527 517 517
81 3 04 527 515 515

199 THE AREA OF THE SHADED CIRCLE IS WHAT PART OF THE AREA OF THE
3 404 3 0 0 0 4 9 0 5 5 37 38 40

15 4 09 527 513 511
22 4 09 527 000 413
25 4 09 527 515 515
40 4 09 527 517 517
54 0 00 000 000 000
63 4 09 527 517 517
79 4 09 527 517 517
81 4 09 527 515 515

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