

INFORMATION DOCUMENT

UNIFORM EXAMINATIONS

MATHEMATICS 436

Secondary IV

568-436

MATHEMATICS 514

Secondary V

568-514

June 2004

August 2004

January 2005

COMPLEMENTARY EXAMINATION

MATHEMATICS 426

Secondary IV

568-426

June 2004

This document is also available on the Internet at the following address:

<http://www.meq.gouv.qc.ca/DGFJ>

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1. PURPOSE OF THE EXAMINATIONS

The purpose of these examinations is to test students on the material covered in their respective mathematics courses.

2. DEVELOPMENT OF THE EXAMINATIONS

Each examination is developed in collaboration with teachers and educational consultants according to the definition of the domain.

3. CONTENT OF THE EXAMINATIONS

Each examination consists of 25 items. The items that test the students' mastery of problem solving are constructed-response items. All the other questions consist of multiple-choice, short-answer or constructed-response items.

The following table shows the distribution of the items, taking into account the relative importance given to the different components of each course.

Mathematics 426

SKILL	Theme		
	Algebra 55%	Geometry 33%	Statistics 12%
Mastery of Concepts 28%	4	2	1
Mastery of Applications 38%	6	3	1
Mastery of Problem Solving 34%	4	3	1

Mathematics 436

SKILL	Theme		
	Algebra 55%	Geometry 35%	Statistics 10%
Mastery of Concepts 28%	4	2	1
Mastery of Applications 38%	5	3	1
Mastery of Problem Solving 34%	4	1	3

Mathematics 514

SKILL	Theme		
	Optimization 50%	Geometry 20%	Statistics and Probability 30%
Mastery of Concepts 28%	3	2	2
Mastery of Applications 38%	5	2	3
Mastery of Problem Solving 34%	4	1	3

4. ADMINISTERING THE EXAMINATIONS

➤ DURATION

Each examination lasts three (3) hours.

➤ AUTHORIZED MATERIALS

The following materials may be used during each examination:

- ♦ Graph paper
- ♦ Ruler, compass, set-square, protractor
- ♦ Scientific calculator with or without a graphic display

The calculator must be portable and designed primarily to perform mathematical calculations. Computers and calculators with a QWERTY keyboard, symbol manipulation capabilities or an electronic date book are not permitted. User guides, memory expansion features or any other calculator accessories are not permitted during the examination. Students may not share their calculator with another student. Communication links between calculators are also forbidden during the examination.

- ♦ Memory aid

The memory aid is **one** letter-size sheet of paper (8" × 11") on which a student will have recorded information of his or her choice. Both sides of the sheet may be used. Any mechanical reproduction of this memory aid is forbidden. Students must draw up the memory aid while they are preparing for the examination. Students may not share their memory aid with another student.

- ♦ Table of trigonometric ratios

Teachers may provide students with a photocopy of the table of trigonometric ratios found on page 6 of this document. This table will no longer be included in the examination booklet.

5. SCORING THE EXAMINATIONS

➤ JUNE AND JANUARY UNIFORM EXAMINATIONS

The Ministère de l'Éducation (MEQ) is responsible for scoring the multiple-choice items. School boards and private schools are responsible for scoring the short-answer and constructed-response items, in accordance with the instructions found in a marking guide prepared by the MEQ.

➤ AUGUST UNIFORM EXAMINATIONS

School boards and private schools are entirely responsible for scoring these examinations in accordance with the instructions found in a marking guide prepared by the MEQ.

➤ COMPLEMENTARY EXAMINATIONS

School boards and private schools are entirely responsible for scoring these examinations in accordance with the instructions found in a marking guide prepared by the MEQ.

➤ MARKING SCALE FOR SCORING THE ANSWERS TO QUESTIONS THAT TEST THE STUDENTS' PROBLEM-SOLVING ABILITIES

The marking scale shown on page 5 of this document must be used to score students' answers to questions that test their ability to solve problems (mastery of problem solving). The terms used in this marking scale are defined below.

➤ DEFINITIONS OF THE TERMS FOUND IN THE MARKING SCALE

- Appropriate method: A procedure consisting of a series of steps that make it possible to solve the problem.

A method may be deemed appropriate even if the final answer is incorrect. For instance, a student may make one or more mistakes in applying the relevant operations and relations, yet his or her method may still be considered appropriate.

A method may be deemed appropriate even if some of the required steps are not fully shown. In this case, the written information is not clear.

- Partially appropriate method: A procedure that will not solve the problem, but which shows that the student has a partial understanding of the problem.

A method may still be considered partially appropriate even if the student makes mistakes in applying operations and relations, or even if his or her written information is not clear.

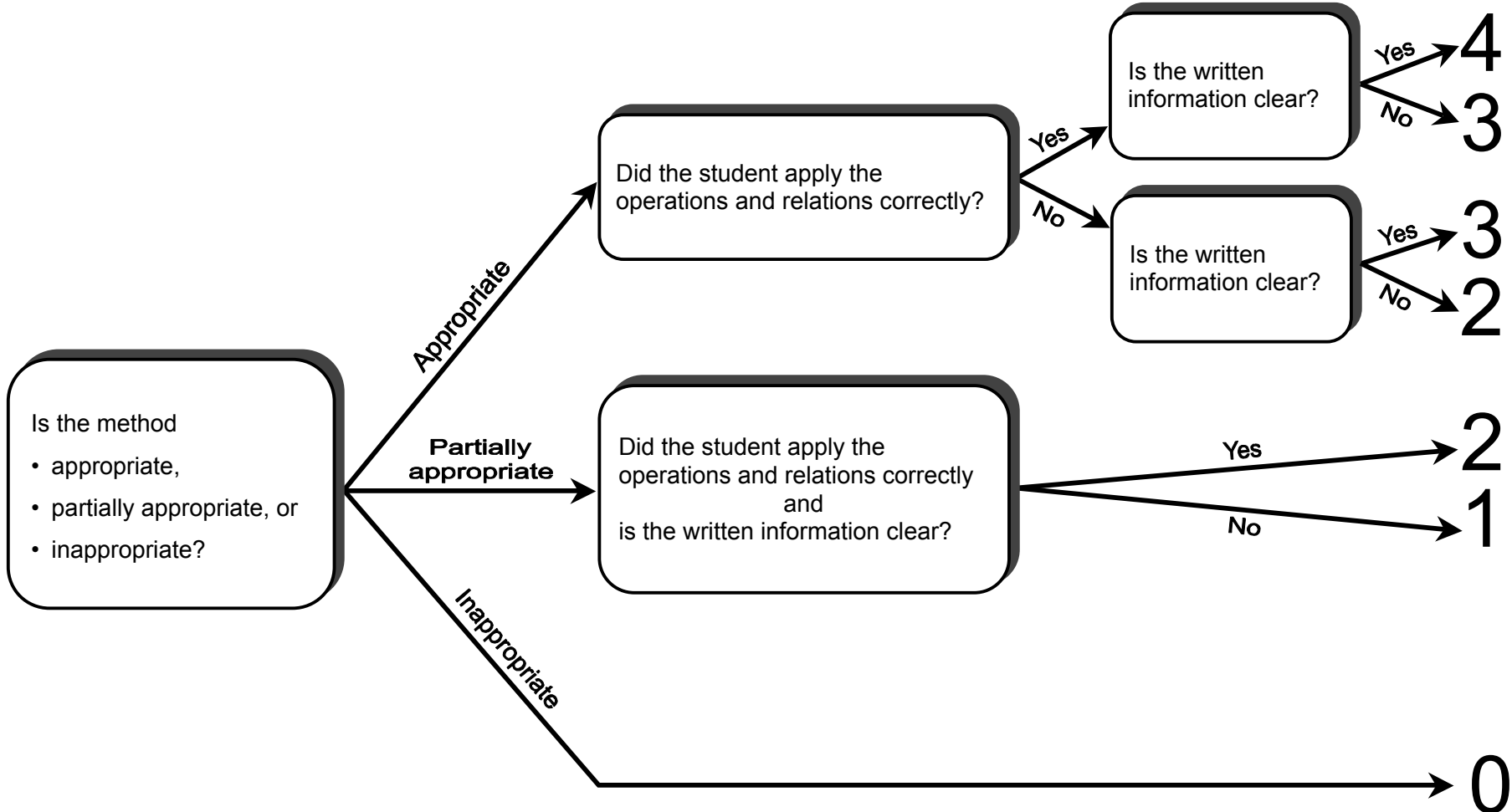
- Inappropriate method: A procedure that will not solve the problem and which shows no evidence that the student has any understanding of the problem.

Students who do not show their work are deemed to have used an inappropriate method.

- Correct application of operations and relations: The student made no mistakes in applying the chosen operations and relations.
- Clear written information: The information is complete, legible and presented using correct language. As a result, the scorer does not need to interpret what the student has done.

MARKING SCALE

Mark(s)



TRIGONOMETRIC RATIOS

Angle	sin	cos	tan	Angle	sin	cos	tan
0°	0.0000	1.0000	0.0000	45°	0.7071	0.7071	1.0000
1°	0.0175	0.9998	0.0175	46°	0.7193	0.6947	1.0355
2°	0.0349	0.9994	0.0349	47°	0.7314	0.6820	1.0724
3°	0.0523	0.9986	0.0524	48°	0.7431	0.6691	1.1106
4°	0.0698	0.9976	0.0699	49°	0.7547	0.6561	1.1504
5°	0.0872	0.9962	0.0875	50°	0.7660	0.6428	1.1918
6°	0.1045	0.9945	0.1051	51°	0.7771	0.6293	1.2349
7°	0.1219	0.9925	0.1228	52°	0.7880	0.6157	1.2799
8°	0.1392	0.9903	0.1405	53°	0.7986	0.6018	1.3270
9°	0.1564	0.9877	0.1584	54°	0.8090	0.5878	1.3764
10°	0.1736	0.9848	0.1763	55°	0.8192	0.5736	1.4281
11°	0.1908	0.9816	0.1944	56°	0.8290	0.5592	1.4826
12°	0.2079	0.9781	0.2126	57°	0.8387	0.5446	1.5399
13°	0.2250	0.9744	0.2309	58°	0.8480	0.5299	1.6003
14°	0.2419	0.9703	0.2493	59°	0.8572	0.5150	1.6643
15°	0.2588	0.9659	0.2679	60°	0.8660	0.5000	1.7321
16°	0.2756	0.9613	0.2867	61°	0.8746	0.4848	1.8040
17°	0.2924	0.9563	0.3057	62°	0.8829	0.4695	1.8807
18°	0.3090	0.9511	0.3249	63°	0.8910	0.4540	1.9626
19°	0.3256	0.9455	0.3443	64°	0.8988	0.4384	2.0503
20°	0.3420	0.9397	0.3640	65°	0.9063	0.4226	2.1445
21°	0.3584	0.9336	0.3839	66°	0.9135	0.4067	2.2460
22°	0.3746	0.9272	0.4040	67°	0.9205	0.3907	2.3559
23°	0.3907	0.9205	0.4245	68°	0.9272	0.3746	2.4751
24°	0.4067	0.9135	0.4452	69°	0.9336	0.3584	2.6051
25°	0.4226	0.9063	0.4663	70°	0.9397	0.3420	2.7475
26°	0.4384	0.8988	0.4877	71°	0.9455	0.3256	2.9042
27°	0.4540	0.8910	0.5095	72°	0.9511	0.3090	3.0777
28°	0.4695	0.8829	0.5317	73°	0.9563	0.2924	3.2709
29°	0.4848	0.8746	0.5543	74°	0.9613	0.2756	3.4874
30°	0.5000	0.8660	0.5774	75°	0.9659	0.2588	3.7321
31°	0.5150	0.8572	0.6009	76°	0.9703	0.2419	4.0108
32°	0.5299	0.8480	0.6249	77°	0.9744	0.2250	4.3315
33°	0.5446	0.8387	0.6494	78°	0.9781	0.2079	4.7046
34°	0.5592	0.8290	0.6745	79°	0.9816	0.1908	5.1446
35°	0.5736	0.8192	0.7002	80°	0.9848	0.1736	5.6713
36°	0.5878	0.8090	0.7265	81°	0.9877	0.1564	6.3138
37°	0.6018	0.7986	0.7536	82°	0.9903	0.1392	7.1154
38°	0.6157	0.7880	0.7813	83°	0.9925	0.1219	8.1443
39°	0.6293	0.7771	0.8098	84°	0.9945	0.1045	9.5144
40°	0.6428	0.7660	0.8391	85°	0.9962	0.0872	11.4301
41°	0.6561	0.7547	0.8693	86°	0.9976	0.0698	14.3007
42°	0.6691	0.7431	0.9004	87°	0.9986	0.0523	19.0811
43°	0.6820	0.7314	0.9325	88°	0.9994	0.0349	28.6363
44°	0.6947	0.7193	0.9657	89°	0.9998	0.0175	57.2900

