

INFORMATION DOCUMENT

COMPLEMENTARY EXAMINATIONS

Secondary Cycle Two

MATHEMATICS
Secondary IV

Science Option	565-420
Technical and Scientific Option	564-420
Cultural, Social and Technical Option	563-420

June 2011

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*This document is available on the Web site of the Ministère de l'Éducation, du Loisir et du Sport at
[<http://www.mels.gouv.qc.ca/dgfj/de/docinfosec.htm>]*

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Introduction

This document provides information about the complementary examinations for each of the three mathematics options offered in the second year of Secondary Cycle Two.

For the third consecutive year, the Ministère de l'Éducation, du Loisir et du Sport (MELS) has produced **complementary examinations** to illustrate how learning is evaluated and to prepare schools for the administration of uniform examinations. Although schools are not required to administer complementary examinations, MELS strongly recommends they do so.

Note that changes have been made to the complementary examinations in mathematics to take into account the new orientations in evaluation. These changes are outlined in sections 1 and 2 of this document.

These examinations were developed in conjunction with education consultants and teachers from various school boards in Québec.

These examinations are slated to become uniform examinations. Each year, the information document will indicate their status.

These examinations provide information on the development of the competency *Uses mathematical reasoning*. They focus on the main concepts and processes covered in the three options that make up the Mathematics program in the second year of Secondary Cycle Two.

Please note that the complementary examinations and related documents will be made available to secondary schools in the spring of 2011. School boards and private schools are responsible for making copies of these materials.

Prototype examinations related to the competency *Solves a situational problem* will also be produced for the three options. Two hours are allotted to complete each of these examinations, which will be distributed in the spring of 2011. An information document about the prototype examinations in secondary school mathematics will be distributed through the secure Web site of the Direction de l'évaluation.

1. STRUCTURE OF THE COMPLEMENTARY EXAMINATIONS

Each complementary examination is divided into three parts. Part A consists of multiple-choice questions, Part B of short-answer questions and Part C of 6 situations involving applications. The following table gives a breakdown of the types of tasks involved as well as the number of marks allotted per question and for each part of the examination.

Breakdown of the types of questions administered in the complementary examination and the number of marks allotted

EXAMINATION PART	TYPE OF TASK	NUMBER	MARKS PER QUESTION	TOTAL MARKS
Part A	Multiple-choice questions	6	4	24
Part B	Short-answer questions	4	4	16
Part C	Situations involving applications	6	10	60

For the complementary examination in each of the three options, MELS provides the following documents:

For the students:

- *Question Booklet* – Parts A and B
- *Student Booklet* in which the students record their answers to the questions in Parts A and B and indicate the reasoning they used for each of the six situations involving applications in Part C, which are presented in this booklet

For teachers:

- *Marking Guide*

Each school board or private school receives only one paper copy of the complementary examinations and guides and is responsible for reproducing these materials according to its needs.

2. CONTENT OF THE COMPLEMENTARY EXAMINATIONS

The questions in Parts A and B of the complementary examination are intended to evaluate mastery of mathematical concepts and processes.

Part C consists of six situations involving applications, which require the student to explain his or her mathematical reasoning and organize and apply mathematical concepts and processes in a clearly defined context. Because there are different aspects of reasoning, these tasks may involve a variety of different actions (e.g. choosing and using mathematical concepts and processes, justifying, proving, convincing, assessing, taking a position, comparing, deducing, generalizing).

3. CONDITIONS FOR ADMINISTERING THE COMPLEMENTARY EXAMINATIONS

3.1 Examination dates

Schools may not modify the complementary examinations if they administer them on the dates set in the June 2011 timetable.

Competency *Uses mathematical reasoning*

- Science Option: June 14, from 9 a.m. to noon
- Technical and Scientific Option: June 14, from 9 a.m. to noon
- Cultural, Social and Technical Option: June 17, from 9 a.m. to noon.¹

Schools may modify these examinations if they administer them after the dates indicated above, provided that teachers are notified of the changes. Schools that modify a complementary examination must indicate this on the cover page of the exam booklets and in the footers.

3.2 Time allotted

According to the official timetable, 3 hours are allotted for the examination. According to the *Administrative Manual for the Certification of Secondary School Studies*, however, an additional 15 minutes must be allotted for each examination.

➤ Preparation phase

A week before the date of each complementary examination

- ♦ Ask the students to prepare a handwritten memory aid on one letter-sized sheet of paper ($8\frac{1}{2} \times 11$). Both sides of the sheet may be used. Mechanical reproduction of this memory aid is forbidden.

➤ Performance phase of the complementary examinations

Permitted materials for students

- Memory aid prepared in advance by the student
- Calculator (with or without a graphic display)
- Ruler, set square, compass, protractor, graph paper

Administration of the complementary examinations

- The teacher must describe the rules for taking the examination.
- Each student works alone.
- The teacher should ask the students to read the instructions in the examination materials they have been given.
- During the examination, the teacher may clarify the meaning of certain words or expressions that are part of the general vocabulary related to the context of the task.

¹ See the June 2011 examination timetable at <http://www.mels.gouv.qc.ca/sanction/horaire/Juin2011.pdf>.

3.3 Adjustments

Adjustments can be made to the conditions under which ministerial examinations are administered so that students with specific needs are able to demonstrate what they have learned. The Direction de la sanction des études has produced documents that provide schools with more information about how to make these adjustments.

4. DISTRIBUTION OF MATERIALS TO TEACHERS

Those responsible for evaluation in each school are asked to provide the teachers concerned with a copy of all the documents related to the complementary examination for a given option as soon as possible so that they will have time to analyze them.

It is recommended that teachers work together to familiarize themselves with the proposed testing procedure and to develop a common understanding of the complementary examination for a given option.

5. MARKING PROCEDURES FOR THE COMPLEMENTARY EXAMINATIONS

School boards and private schools are responsible for grading the complementary examinations. However, teachers should agree on how to grade the situations involving applications in Part C to ensure a common understanding of the related requirements.

The *Marking Guide* contains an answer key for Parts A and B of the examinations. Examples of appropriate reasoning are also presented for the different situations involving applications in Part C. The scorer must exercise his or her judgment and accept any other appropriate reasoning.

The situations involving applications are graded by comparing the student's solution to the different performance levels that take into account the evaluation criteria indicated. The rubric related to situations involving applications may be used to analyze the students' work. The five performance levels in these rubrics, which are presented as brief descriptions, make it possible to evaluate student work in accordance with the criteria indicated.

The *Marking Guide* provides additional guidelines to make it easier to grade each situation involving applications and use the rubric.

The result obtained for the situations involving applications in Part C of the complementary examination will be determined using the weighting of the evaluation criteria.

The weighting of the evaluation criteria will vary according to the purpose and requirements of each situation involving applications. Both the *Marking Guide* and the *Student Booklet* will show the weighting for each situation involving applications.

6. COMPLEMENTARY EXAMINATION RESULTS

The result obtained on Part C of the examination consists of the sum of the results obtained for the situations involving applications. The preliminary result obtained on Part C of this examination is expressed as a mark out of 600. The final result on Part C, expressed as a mark out of 60, is calculated by dividing the preliminary result by 10 and rounding it off to the nearest unit.

The total complementary examination mark is calculated by adding this result to the results for Parts A and B.

7. USING THE COMPLEMENTARY EXAMINATION RESULTS

Schools are responsible for establishing, in their own evaluation standards and procedures, how the results obtained on the complementary examinations will be used. If schools decide to use this examination, MELS recommends that they take these results into account when determining the student's final mark.

The result obtained for a particular competency on the complementary examination may be combined with the result on the competency report, in accordance with a weighting determined by the school.

The results determined for each competency are then combined according to the weighting established for mathematics to make up the subject result.

Please note that the students' results on the complementary examinations are not to be submitted to the Direction de la sanction des études.

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