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Grade 12  
Consumer Mathematics  
Standards Test

# Project Scoring Guide

Radio Station  
Program Director

December 2008

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# **Excerpts from the *Project Resource Package***

## **Welcome to the *Radio Station Program Director Project***

### **General Information**

The purpose of the first session is to provide an opportunity for you to

- develop an understanding of the project requirements
- become familiar with the information contained in the *Project Resource Package*
- share ideas related to the project in a brainstorming session

After the first project session the following conditions apply:

- Two additional classwork periods will be provided.
- Your teacher cannot assist you in developing or revising your project.
- You must submit an individual project that reflects your own work.

## **Guidelines for the *Radio Station Program Director Project***

You have been hired as the program director of a new local radio station. The radio station's signal will reach province-wide.

**In doing this project the following scenarios and requirements apply:**

1. You will decide on the genre, name, motto, and target audience of the radio station.
2. You will choose the radio announcer(s) for the morning show which runs from 6 a.m. to 9 a.m.
3. You will create the morning show schedule for one of the three hours. Timelines for the following must be included in your schedule:
  - News
  - Sports
  - Traffic
  - Games
  - Contests
  - Advertising (approximately 12 to 15 minutes per hour)
  - Music
    - plays for a minimum of 24 minutes per hour
    - each song is three minutes in length
    - a minimum of 35% of the music airtime must be designated “Canadian content”
  - Dialogue
4. You will decide on promotional appearances for your radio announcer(s).
5. The portion of music licences, utilities, building expenses, and other costs for the three-hour morning show is \$18,375 per month.
6. The salary expense for technicians, assistants, and the director for the three-hour morning show totals \$26,000 per month.
7. All applicable taxes are included.
8. The morning show must operate with a minimum 25% profit.  
$$\left( \text{Profit Percentage} = \frac{\text{Profit}}{\text{Revenue}} \times 100 \right)$$

## **Directions for the *Radio Station Program Director* Project**

**Your completed project must include a profile of your radio station, including the following information but not limited to:**

- the genre, name, and motto of the radio station
- the target audience
- a description of the morning show
- a schedule for one hour of the morning show
- a monthly budget for the three-hour morning show

**Your completed project must:**

- be separate from this *Project Resource Package* booklet
- be well organized and clearly presented with an introduction and a conclusion
- include justifications of any assumptions or decisions you make in completing your project
- be printed from a computer, or written in blue or black ink



## Note to Teacher:

The purpose of this document is to assist teachers in detecting reasonable calculations and sufficient data when scoring student projects. The document includes a scoring rubric and sample calculations pertaining to the Project.

A variety of organizational structures and types of responses to the *Radio Station Program Director* project is anticipated. Student explanations for their decision making will vary. When organizing the project students may consider many issues.

## Scoring the Project:

Student projects are scored using a pre-established rubric that covers three broad categories. The scores awarded are placed on a *Project Scoring Sheet*. The “Organization/Structure and Communication” category primarily focuses on how the student has organized and communicated work. Judging whether the student selected required data and used appropriate mathematical procedures is the primary focus of the “Data Selection/Analysis” category. The third category, “Concepts/Reasoning”, is primarily focused on judging if the student understood necessary concepts and demonstrated logical reasoning in drawing conclusions and making justifications.

The order of proceeding through the rubric and completing the *Project Scoring Sheet* is a decision teachers make based on personal preference. For example, some teachers may decide to start by reviewing the “Organization/Structure and Communication” category first. This would involve reviewing the project to judge how the student met the criteria outlined in the rubric. These teachers might then move to the “Data Selection/Analysis” category and finally to the “Concepts/Reasoning” category. Other teachers may decide to start at the “Data Selection/Analysis” category then move to the “Organization/Structure and Communication” category followed by the “Concepts/Reasoning” category.

The “Consider the Following” section of the rubric is specific to each project. The items listed under the heading are not intended to be exhaustive but rather they are included to assist teachers in their marking.

If the Project is not submitted, then shade in the “no submission” bubble on the scoring sheet and do not shade in the “insufficient information” bubbles.

# Consumer Mathematics: Project Scoring Rubric

## *The Radio Station Program Director*

Consumer Mathematics Project Scoring Rubric	Consider the Following:
<p><b>Organization/Structure and Communication</b></p> <p><b>Has the student communicated mathematical and other relevant information in a clear and organized way?</b></p> <ul style="list-style-type: none"> <li>— Organization/Structure (effective use of introduction[s], sections and/or headings, conclusion[s] or summary statement[s]...)</li> <li>— Communication (effective use of charts, tables, graphs, etc. to display data and relevant information; clear presentation; effective use of terminology)</li> </ul>	<ul style="list-style-type: none"> <li>— introduction, heading(s)/subheading(s), conclusion(s)</li> <li>— presentation of charts/tables/graphs</li> </ul>
<p><b>Data Selection/Analysis</b></p> <p><b>Has the student selected and analyzed data appropriately?</b></p> <ul style="list-style-type: none"> <li>— Selection (required data selected)</li> <li>— Analysis (exploration of any relevant patterns or relationships, used mathematical procedures appropriately)</li> </ul>	<ul style="list-style-type: none"> <li>— description of radio station               <ul style="list-style-type: none"> <li>• name and motto</li> <li>• target audience</li> <li>• genre of show</li> <li>• announcer(s) of show</li> </ul> </li> <li>— timeline for 1 hour of morning show               <ul style="list-style-type: none"> <li>• news</li> <li>• sports</li> <li>• traffic</li> <li>• advertising (12 to 15 minutes)</li> <li>• music (minimum 24 minutes with 35% designated “Canadian content”)</li> </ul> </li> <li>— monthly budget               <ul style="list-style-type: none"> <li>• revenues                   <ul style="list-style-type: none"> <li>– advertising</li> <li>– promotional appearances</li> </ul> </li> <li>• expenses                   <ul style="list-style-type: none"> <li>– announcer’s salary/salaries</li> <li>– sports</li> <li>– other salaries</li> <li>– news</li> <li>– licenses, utilities, etc.</li> </ul> </li> <li>– contests</li> <li>– traffic</li> <li>– games</li> </ul> </li> </ul>
<p><b>Concepts/Reasoning</b></p> <p><b>Has the student demonstrated an understanding of mathematical concepts as well as the ability to reason logically and draw appropriate conclusions?</b></p> <ul style="list-style-type: none"> <li>— Concepts (demonstrated understanding of essential mathematical concepts...)</li> <li>— Reasoning (evidence reasoning/logical thinking was involved in producing the project and in drawing appropriate conclusions...)</li> </ul>	<ul style="list-style-type: none"> <li>— appropriate assumptions/justifications/explanations/conclusions</li> <li>— realistic profit (minimum 25%)</li> <li>— realistic revenues/expenses</li> <li>— realistic timeline</li> <li>— correct calculation of monthly costs (weekly costs × 52 weeks ÷ 12 months)</li> </ul>
<p><b>Performance Level</b></p>	

	<b>Level 1 BELOW LEVEL DESCRIPTORS</b>		<b>Level 2 AT LEVEL DESCRIPTORS</b>		<b>Level 3 ABOVE LEVEL DESCRIPTORS</b>
<b>Insufficient Information/Evidence</b>	<p>Example:</p> <ul style="list-style-type: none"> <li>— little organization of ideas; limited (no) use of introductions, sections/headings, conclusion(s)/summary statement(s)</li> <li>— partially legible; information/details/calculations missing; vague presentation; difficult to follow</li> </ul>		<p>Example:</p> <ul style="list-style-type: none"> <li>— most ideas organized; generally appropriate use of introductions, sections/headings, conclusion(s)/summary statement(s)</li> <li>— legible; most information/details/calculations evident; generally effective presentation; can follow with little difficulty</li> </ul>		<p>Example:</p> <ul style="list-style-type: none"> <li>— exceptional organization of ideas; exemplary use of introductions, sections/headings, conclusion(s)/summary statement(s)</li> <li>— easy to read; insightful information/details/calculations evident; very effective presentation; easy to follow</li> </ul>
	<p>Example:</p> <ul style="list-style-type: none"> <li>— limited selection of required data</li> <li>— limited exploration of patterns/relationships; limited use of appropriate mathematical procedures (major computational errors)</li> </ul>		<p>Example:</p> <ul style="list-style-type: none"> <li>— most required data selected (minor omissions)</li> <li>— most patterns/relationships explored; most mathematical procedures used were appropriate (some computational errors)</li> </ul>		<p>Example:</p> <ul style="list-style-type: none"> <li>— all required data selected</li> <li>— insightful exploration of patterns/relationships; all mathematical procedures used were appropriate (only minor computational errors)</li> </ul>
	<p>Example:</p> <ul style="list-style-type: none"> <li>— limited evidence that the student understood the essential mathematical concepts</li> <li>— limited evidence of logical reasoning that led to appropriate conclusions; missing or incorrect justification(s)/explanation(s)</li> </ul>		<p>Example:</p> <ul style="list-style-type: none"> <li>— evidence that the student understood most of the essential mathematical concepts</li> <li>— evidence of logical reasoning (some minor inconsistencies) that led to appropriate conclusions; some plausible justification(s)/explanation(s)</li> </ul>		<p>Example:</p> <ul style="list-style-type: none"> <li>— evidence that the student understood all mathematical concepts</li> <li>— evidence of insightful and consistent reasoning that led to appropriate conclusions; clear and logical justification(s)/explanation(s)</li> </ul>
	<b>Level 1</b>	<b>Approaching Level 2</b>	<b>Level 2</b>	<b>Approaching Level 3</b>	<b>Level 3</b>
<b>0/5</b>	<b>1/5</b>	<b>2/5</b>	<b>3/5</b>	<b>4/5</b>	<b>5/5</b>



**Sample Calculations**  
**Example 1**  
**Minimum Revenue – Minimum Expenses**

**Revenue Per Month**

Advertising	\$213 200.00
(\$410 per 1.5 minutes × 8 per hour × 3 hours × 5 days × 52 weeks) ÷ 12	
Promotional	<u>\$0.00</u>
Total Revenue	\$213 200.00

**Expenses Per Month**

Music Licenses, Utilities, Building Expenses	\$18 375.00
Salary for Technician, Assistant, and Director	\$26 000.00
Announcer (Grant Telin) (\$40 000 ÷ 12)	\$3 333.33
News (\$500 × 3 hours × 5 days × 52 weeks) ÷ 12	\$32 500.00
Sports (\$400 × 3 hours × 5 days × 52 weeks) ÷ 12	\$26 000.00
Traffic (\$100 × 3 hours × 5 days × 52 weeks) ÷ 12	\$6 500.00
Games	\$0.00
Contests (\$10 per hour × 3 hours × 5 days × 52 weeks) ÷ 12	<u>\$650.00</u>
Total Expenses	\$113 358.33

**Profit**

$$\$213\,200.00 - \$113\,358.33 = \$99\,841.67$$

**Profit Percentage**

$$\frac{\$99\,841.67}{\$213\,200.00} \times 100 = 46.8\%$$



**Sample Calculations**  
**Example 2**  
**Maximum Revenue – Maximum Expenses**

**Revenue Per Month**

Advertising	$(\$260 \text{ per } 0.5 \text{ minute} \times 30 \text{ per hour} \times 3 \text{ hours} \times 5 \text{ days} \times 52 \text{ weeks}) \div 12$	\$507 000.00
Promotional	$(\$1\ 000 \times 6 \text{ appearances})$	<u>\$6 000.00</u>
Total Revenue		\$513 000.00

**Expenses Per Month**

Music Licenses, Utilities, Building Expenses		\$18 375.00
Salary for Technician, Assistant, and Director		\$26 000.00
Announcer (Cool Cat, Deidre)	$(\$42\ 000 + \$32\ 000) \div 12$	\$6 166.67
News	$((\$2\ 000 + \$1\ 000 + \$500) \times 3 \text{ hours} \times 5 \text{ days} \times 52 \text{ weeks}) \div 12$	\$227 500.00
Sports	$(\$400 \times 3 \text{ hours} \times 5 \text{ days} \times 52 \text{ weeks}) \div 12$	\$26 000.00
Traffic	$((\$100 + \$200 + \$750) \times 3 \text{ hours} \times 5 \text{ days} \times 52 \text{ weeks}) \div 12$	\$68 250.00
Games	$(\$3 \times 3 \text{ hours} \times 5 \text{ days} \times 52 \text{ weeks}) \div 12$	\$195.00
Contest		<u>\$2 500.00</u>
Total Expenses		\$374 986.67

**Profit**

$$\$513\ 000.00 - \$374\ 986.67 = \$138\ 013.33$$

**Profit Percentage**

$$\frac{\$138\ 013.33}{\$513\ 000.00} \times 100 = 26.9\%$$

