

# ASSESSMENT FOR NON-CONTENT MATHEMATICAL ERRORS


## PRESENTATION ERRORS

A clearly presented solution:

- Uses an easily followed layout presented legibly
- Uses clear introductory and concluding statements
- Presents steps in a logical order
- Uses correct English to clarify the steps
- Chooses notation which avoids misinterpretation

A properly presented graph:

- Has been drawn with a straightedge for axes and linear relations or without a straightedge for curves
- Is properly labelled: horizontal and vertical axes, each function on the graph
- Has an appropriate and constant scale on both the x and y axes (NOTE: the scale on the vertical and horizontal axes do not need to be the same)
- Has arrows on the ends of the axes and on the end(s) of each relation(s), where appropriate

Presentation errors, designated with  may be given to solutions that do not follow the guidelines. The presentation marks will be assigned under the Communication category.

As a 'rule of thumb', students may be docked presentation errors if:

- their solutions do not stand alone
- abbreviations or symbols are improperly used without affecting the accuracy of the question
- diagrams/graphs are drawn sloppily or labelled inadequately
- steps are presented in an illogical order
- appropriate statements are excluded
- variables are improperly introduced
- superfluous material is included
- spelling errors or grammatical errors are included
- handwriting is illegible
- an inefficient solution is provided for a routine skill-based question
- solutions are worked across a page rather than in a column where the equal signs are lined up beneath one another

**Blank Solutions**

Solutions which are left blank do not allow the student to demonstrate communication skills. This will adversely affect the mark for presentation.

One presentation mark may be deducted for up to 5 marks of questions omitted. For example, for blank questions worth 1 to 5 marks, one presentation error is awarded; for blank questions worth 6 to 10 marks, two presentation error is awarded, etc.

## TECHNICAL ERRORS

In general, technical errors are mathematical errors which are not accounted for in the content category of the marking scheme.

- Technical errors can include:
- Content errors from previous grades
- Misuse of equal signs in which incorrect statements are made
- Failing to simplify an answer
- Writing an approximate answer when an exact answer is required
- Incorrect use of brackets
- Incorrect writing of radical signs, exponents, coordinates, etc.

An error which was considered a content error in grade nine could be considered a technical error in higher grades.

Example: A new topic in grade 9 math is solving linear equations in one variable by the algebraic method. However, in this process, many arithmetic skills from previous grades are required.

Solve for x:  $2x - 5 + 6x - 7 = 8 - 3x + 2$

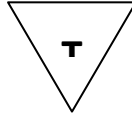
Marking Scheme:	Student Solution #1:	Student Solution #2:
$2x - 5 + 6x - 7 = 8 - 3x + 2$	$2x - 5 + 6x - 7 = 8 - 3x + 2$	$2x - 5 + 6x - 7 = 8 - 3x + 2$
$8x - 12 = 10 - 3x \checkmark$	$8x - 12 = 10 - 3x$	$8x - 12 = 10 - 3x$
$8x + 3x = 10 + 12 \checkmark$	$8x + 3x = 10 + 12$	$8x - 3x = 10 - 12$
$11x = 22$	$10x = 22$	$5x = -2$
$X = 2 \checkmark$	$x = 2.2$	$x = -0.4$

In Solution #1, the student has demonstrated knowledge of the objective being tested but has made one error, in adding 8 and 3. Three marks should be awarded for content, but a technical error should be awarded.

In Solution #2, the error made is content-based. Since there is one point awarded to this in the marking scheme, the student loses one content mark and gets 2 out of 3.

- Only those errors not covered under content in the marking scheme are considered technical errors.
- On an examination, a maximum of five technical errors will be indicated for repeated errors of the same type.
- On a class test, a maximum of three technical errors will be indicated for repeated errors of the same type.

Technical errors will be identified by



in the margin.