





be transcribed as part of that material even if they could logically be considered as belonging to the larger sentence structure.

4. To avoid use of switch indicators when a single word standing alone occurs between two math expressions, a *single-word switch indicator* (6, 3) may be used in Nemeth Code to indicate that the following word (or hyphenated word) is in UEB. Contractions may be used in the subsequent word. The single-word switch indicator should precede the word whether or not it contains contractions. The effect of the indicator is terminated by a space. Otherwise, no contractions are used in Nemeth Code. Similar to the capital indicators, the one-word switch indicator is disregarded for purposes of the UEB lower-sign rule. Before a consecutive sequence of two or more words, terminate Nemeth Code. **Note:** The configuration (6, 3) is assigned a new meaning and is no longer used as a transcriber's note indicator.
5. A switch from UEB to Nemeth Code terminates the effect of a typeform indicator. No UEB typeform terminator is required. This does not apply when switching from Nemeth to UEB. (Capitalization is not a typeform attribute.)

## **UEB Rule for Use of Opening and Closing Nemeth Indicators**

The Opening Nemeth Code Indicator and Nemeth Code Terminator should be used to indicate the switch in and out of Nemeth Code. For convenience, the applicable section of the *Rules of Unified English Braille 2013* is inserted here. The examples provided here have been modified as per the guidelines in this document. Included changes are: keeping the open/close Nemeth indicators on the line with the equation if the entire equation and indicators will fit on the line; not leaving Nemeth Code for single words between mathematical expressions:

### **14.6 Nemeth Code within UEB text**

- 14.6.1 When technical material is transcribed according to the provisions of *The Nemeth Braille Code for Mathematics and Science Notation* within UEB text, the following sections provide for switching between UEB and Nemeth Code.
- 14.6.2 Place the Opening Nemeth Code Indicator followed by a space before the sequence to which it applies. Its effect is terminated by the Nemeth Code Terminator preceded by a space.





















In this second example there is meaning to the italics. The italics would be retained using UEB type-form indicators, but the boldface type-form may be ignored.

<i>Inverse of a 2 × 2 Matrix</i>	Any matrix $M$ , $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ , will have an inverse $M^{-1}$ if and only if $\begin{vmatrix} a & b \\ c & d \end{vmatrix} \neq 0$ . Then $M^{-1} = \frac{1}{ad - bc} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$ .
--------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

16. Number lines are transcribed in Nemeth Code following the provisions of the Guidelines and Standards for Tactile Graphics. The following symbols are used and must be listed in braille order in a separate category on the Special Symbols page. Following is *suggested* wording.

Braille	Meaning
⠠⠨	Right-pointing arrowhead
⠠⠨⠠	Bold right-pointing arrowhead
⠠⠨⠠⠨	Ordinary (regular) coordinate (scale) mark
⠠⠨⠠⠨⠠	Open (hollow) circle, placed above the number line
⠠⠨⠠⠨⠠⠨	Right bracket, placed above the number line
⠠⠨⠠⠨⠠⠨⠠	Left bracket, placed above the number line
⠠⠨⠠⠨⠠⠨⠠⠨	Solid (filled-in) circle, placed above the number line
⠠⠨⠠⠨⠠⠨⠠⠨⠠	Left parenthesis, placed above the number line
⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨	Right parenthesis, placed above the number line
⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠	Left-pointing arrowhead
⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨	Bold left-pointing arrowhead
⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠	Line segment
⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨	Bold (shaded, colored) line segment

**NOTE:** These symbols should not be used below the Grade 4 level.

## Formatting

The switch indicators signal which **symbols** are to be used, but they do not govern the **formatting**. Formatting (that is, indentions, line spacing, centering, etc.) is handled as a separate issue from the switch between **symbols sets/notation**. This means that the document that contains even one set of Nemeth switch indicators is formatted according to the following mix of Nemeth Code and *Braille Formats* provisions regardless of whether Nemeth Code is in effect. Note that for this context, emphasis falls in the category of symbols, not formatting.

1. Follow Nemeth Code rules about division of mathematical expressions. If there is not room on a line for the Nemeth Code terminator and any related punctuation to follow the last expression, the indicator may be separated from the math and placed on the following line.
2. For a box transcribed all in Nemeth Code, the Opening Nemeth Code Indicator is at the beginning of the top box line, followed by a blank space. The Nemeth Code Terminator is at the end of the bottom box line, preceded by a space. The box lines themselves should be brailled as indicated in the most current edition of *Braille Formats*. If a transcriber's note occurs inside a box that is otherwise all in Nemeth Code, do not include the box lines within Nemeth Code. Preferably, the transcriber's note would be transcribed before the box. If technical material follows the box without interruption, begin the Nemeth Code before the box and terminate Nemeth Code after the technical material following the box.

## Example:

### Tangent table

x (rad)	x (°)	tan(x)
$-\pi/2$	$-90^\circ$	$-\infty$
-1.2490	$-71.565^\circ$	-3
-1.1071	$-63.435^\circ$	-2
$-\pi/3$	$-60^\circ$	$-\sqrt{3}$
$-\pi/4$	$-45^\circ$	-1
$-\pi/6$	$-30^\circ$	$-1/\sqrt{3}$
-0.4636	$-26.565^\circ$	-0.5
0	$0^\circ$	0
0.4636	$26.565^\circ$	0.5
$\pi/6$	$30^\circ$	$1/\sqrt{3}$
$\pi/4$	$45^\circ$	1
$\pi/3$	$60^\circ$	$\sqrt{3}$
1.1071	$63.435^\circ$	2
1.2490	$71.565^\circ$	3
$\pi/2$	$90^\circ$	$\infty$





3. All narrative paragraphs should be transcribed in 3-1 (no blocked paragraphs).
4. Runover margins for itemized material are determined individually for each question rather than by section as *Formats* states.
5. For an exercise with any number of subentry levels, use margins 1-5 for the first level, and 3-5 for all subsequent levels. (Follows *Nemeth formatting rules*).
6. It is preferred that authors' comments following mathematical equations be treated as part of the line of the equation, with runovers in the appropriate location for the expression. Alternatively, authors' comments may be blocked four cells to the right of the runover of the expression. The comments should be formatted in a consistent manner within a transcription.

**Example:**

You can substitute these values into the equation to find  $C$ .

$$Ax + By = C \quad \textit{Standard form of a linear equation}$$

$$4x + 5y = C \quad \textit{Substitute values for A and B.}$$

$$4(3) + 5(1) = C \quad \textit{Substitute values for x and y.}$$

$$12 + 5 = C$$

$$17 = C$$

The standard form of the equation is  $4x + 5y = 17$ .

Braille representation of the example text and equations above.

7. Follow *Formats* for displayed literary text, with the exception of blocked paragraphs, which are not used in Nemeth. Follow Nemeth rules for displayed math expressions (displayed material begins 2 cells to the right of the material above it with runovers two cells to the right of that; no blank lines).
8. Instructions are transcribed in 5-3 (follows Nemeth formatting rules). At least one line of the instructions must be on the same braille page as the questions or itemized text that follow.
9. Instructions must be followed by lettered or numbered exercises. If there are no exercises following the instructions, the text is considered a narrative paragraph and transcribed in 3-1.
10. If the body of a table, excluding column headings, consists only of numbers, the numeric indicator **may** be omitted. The table can contain no guide dots, plus/minus signs, etc. No TN is required. The body of the table is transcribed according to Nemeth Code and must be within Nemeth indicators
11. In listed table format, when transcribing within the Nemeth switches, a double dash (four cells of dots 36) is used for blank entries that are to be filled in.
12. Transcribe proportion and ratio symbols according to the rules of Nemeth Code.
13. In a technical context, use the Nemeth caret; in surrounding text, use the UEB caret. This means that the caret may be brailled two different ways within one document. The distinction is based on meaning.
14. Words enclosed in shapes are transcribed according to the methods for shapes with internal modification and must be enclosed within Nemeth switches. This includes print representations of computer or calculator keys.
15. When a matrix is embedded in text, the Opening Nemeth Code Indicator is placed on the top line of the matrix before the opening enlarged grouping symbol on that line; the Nemeth Code Terminator is placed on the top line of the matrix after the closing enlarged grouping symbol. These indicators apply to the whole arrangement. The enlarged grouping indicators provide the boundaries on the subsequent lines of the matrix. If there is room on the top line after the matrix, surrounding text can continue on that line.

