

LESSON 3

- WORDS
 - Introduction to Abbreviations
 - Single-Word Switch Indicator
- LETTERS
 - Introduction to the English-Letter Indicator
 - Mathematical Letter Combinations

Format

- Keep Together
- FORMAT SUMMARY #2

Answers to Practice Material

LESSON PREVIEW

Transcription of words in mathematical context requires a close look at punctuation, capitalization, and nonuse of contractions. Abbreviations require special treatment. A single narrative word may be transcribed within the code switches by using a single-word switch indicator. Code switching at page turns is examined. "Single letters" in Nemeth are defined, and the English-letter indicator is introduced.

PRACTICE 3A

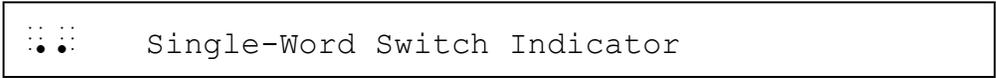
- A. If 1 pound of Swiss cheese costs \$2.50, how much does 4.8 pounds cost?
 - B. JMHS's set of high-jump champions: {Terry, Leslie, Traci}
 - C. The parts of a subtraction problem are named as follows: minuend – subtrahend = difference.
 - D. Did you know that 98.6 degrees Fahrenheit is not necessarily "normal" body temperature for everyone?
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More To Come This does not complete the discussion of abbreviations in mathematical context. Single-letter abbreviations, abbreviations that use the same letters as a shortform, and further spacing rules within mathematical expressions will be discussed in Lesson 4.

Single-Word Switch Indicator

3.6 The Single-Word Switch Indicator

Words that do not provide mathematical meaning are transcribed in UEB. When a single word occurs between two math expressions, the single-word switch indicator is used to indicate that the following word is in UEB.

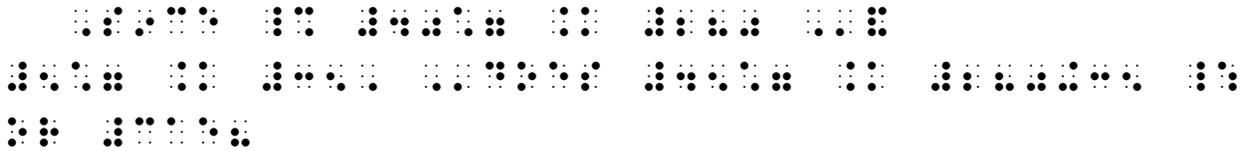


Until this symbol becomes widely recognized, we suggest that the single-word switch indicator be listed on the Special Symbols page. See the Final Lesson for details.

3.6.1 Spacing and Contractions. The single-word switch indicator is unspaced from the word. Contractions are used according to the rules of UEB. The switch is required on a single word even if the word contains no contractions. The effect of the single-word switch indicator is terminated by a space, and Nemeth Code resumes.

Example 3-28

Since $40 \cdot 7 = 280$ and $5 \cdot 7 = 35$, does $45 \cdot 7 = 280 + 35$ or 315?

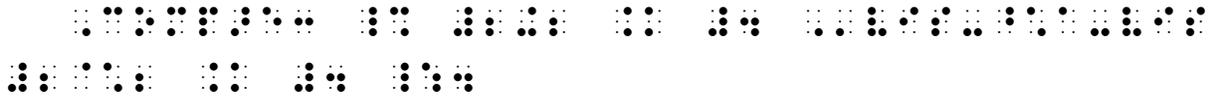


The words Since, and, does, and or are part of the sentence structure—they are not being used mathematically—and so UEB applies.

3.6.2 With a Hyphenated Word. The single-word switch indicator can be used with a hyphenated compound word.

Example 3-29

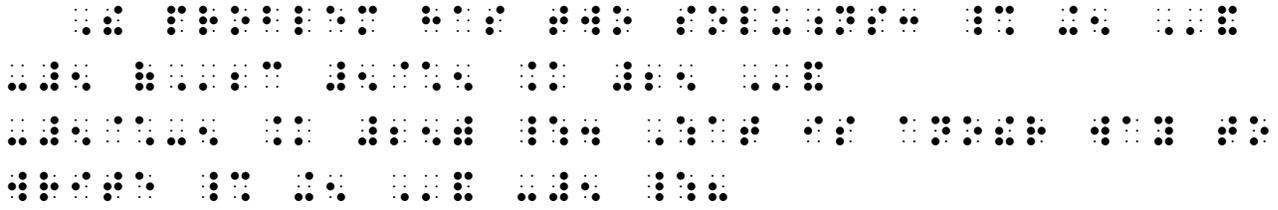
Compare: $2 + 2 = 4$ vis-à-vis $2 \times 2 = 4$.



The hyphenated compound word vis-à-vis is considered to be one word. The acute accent follows UEB rules for modified letters.

Example 3-36

The problem has two solutions: +5 and -5 (because $5 \times 5 = 25$ and $-5 \times -5 = 25$). What is another way to write +5 and -5?

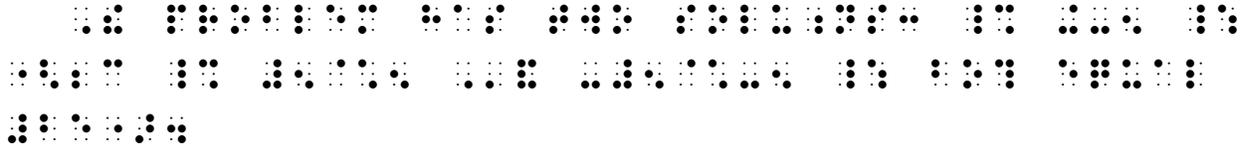


The opening and closing parentheses are in Nemeth. The single-word switch indicator immediately follows the opening parenthesis.

Example 3-37

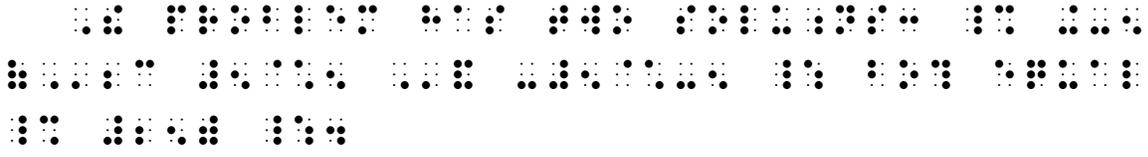
The problem has two solutions: ± 5 (because 5×5 and -5×-5 both equal 25).

Transcription A.



The closing parenthesis is in UEB. The opening parenthesis must also be in UEB. Because a single-word switch indicator cannot be used immediately before an opening parenthesis, Nemeth Code is terminated and then reopened after the word.

Transcription B.



By transcribing the numeral 25 and the closing parenthesis in Nemeth, the opening parenthesis is now done in Nemeth, similar to Example 3-36.

3.6.8 **The Word "of"**. The word "of" requires a closer look. Within a narrative sentence, it is a word like any other word and may require a single-word switch indicator. However, when "of" is part of an equation, it is transcribed in Nemeth, uncontracted, without any code switching. Compare the treatment of the word "of" in these examples.

The first letter is not from the English alphabet, the second and fourth letters are not in regular type, the third letter is modified.

- *Special Case:* A letter representing a mathematical variable is often printed in italics but the italics are disregarded in braille. Such a letter is considered to be a "single letter" in Nemeth. Lesson 7 discusses typeform.

- ii. Furthermore, in the print copy the letter must be both preceded by a space or by one or more punctuation marks and followed by a space or by one or more punctuation marks.

These are "single letters" "y" x, "w S"

Each letter is preceded and followed by punctuation or by a space.

These are not "single letters" $-x$ "wS" $y+z$

The x, z, and S are not preceded by a space or by punctuation ($-x$ is "negative x"); the y and the w are not followed by a space or by punctuation.

- Nemeth grouping symbols, such as parentheses, are not considered to be punctuation marks. Rules for letters touching grouping symbols will be discussed in Lesson 4.

- iii. Whether the leading punctuation mark is preceded by a space or not is irrelevant; whether the following punctuation mark is followed by a space or not is irrelevant.

These are "single letters" "x"+"y"

Each letter is both preceded and followed by punctuation.

- iv. If the space shown in print is not shown in braille, the letter is no longer a "single letter."

These are not "single letters" r + s

Although each letter is preceded and followed by a space in print, in braille the plus sign is unspaced from the letters.

- v. And finally, to be defined as a "single letter" the letter must not be an abbreviation nor can it be a word ("a", "A", "I", or "O").

These are not "single letters" I need 4.5 m of fabric.

I is a word; m is an abbreviation for meters.

- Single-letter abbreviations will be discussed in Lesson 4.

Throughout this course, when referring to the Nemeth Code's definition of a single letter, the term "single letter" is in quotation marks.

3.13 Letters as Identifiers

Letters used as identifiers are constructed according to the rules of the code which is in effect at the time—UEB or Nemeth. Compare:

Print	UEB	Nemeth
a.	⠠⠁	⠠⠠⠁
B.	⠠⠠⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠⠠⠠⠠⠠
(a)	⠠⠠⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠
(B)	⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠⠠⠠
c)	⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠

Instructions: Demonstrate the use and the nonuse of the English-letter indicator for "single letters" by transcribing this practice entirely in Nemeth. Place the opening Nemeth Code indicator in cell 1 on the first line. Begin item (a) on the next line.

PRACTICE 3E

- (a) $r = \text{rate}$
- (b) $"r" = \text{rate}$
- (c) $x, y, z < 100$
- (d) $n\text{¢} = \$4.95$
- (e) $x > "3"$
- (f) $a + b$
- (g) $|y| = |-y|$
- (h) $|x + y| = |x| + |y|$
- (i) P(red and blue)

FORMAT SUMMARY #2

Here is a summary of the Nemeth formats encountered in Lessons 2 and 3.

Side-by-Side Items in Itemized Material with No Subdivisions When unsubdivided itemized material is arranged side by side across the page in print, the braille format must be changed so that all identifiers start in cell 1.

Keep Together—Hyphenated Expressions A hyphenated expression containing one or more mathematical components must not be divided between braille lines.

Keep Together—Mathematical Expression If a page number on line 25 or line 1 does not allow the entire mathematical expression to fit on the line, the expression must be brought down to the next line that has enough usable cells. If the expression will fit on one line but the code switch indicators will not, one or both of the indicators can be placed on a different line.

Keep Together—Abbreviation An abbreviation and a preceding or following numeral to which it applies must not be divided between braille lines.

For further practice, see Appendix A—Reading Practice.

EXERCISE 3

Prepare Exercise 3 for your grader.

