

# LESSON 17

Read about this PROVISIONAL EDITION in the front matter to this book.  
Check the NFB website periodically for updates to this lesson.

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## TABLES

An introduction to table format in technical materials was given in **Lesson 6**. Stem-and-leaf plots were studied in **Lesson 15**. Further rules which apply to technical tables are illustrated in this lesson.

**17.1 Structure of Tables:** Tables consisting entirely of words are transcribed in UEB. When mathematical data occur in the table, code switching decisions depend upon the content of the entire table and the spacing restrictions encountered on the braille page. Details concerning the layout of the columns and rows are provided in *Braille Formats*, including strategies to consider when a table is too wide to fit within the margins of the braille page.

**17.2 Table Label and Title:** Follow appropriate rules according to the Nemeth Code or UEB in table labels and titles, switching to Nemeth Code only when necessary.

*Example 17.2-1* (Table label and title only)

**Table 2-3. MINIMUM TOLERANCE LEVELS**

The image shows the Braille representation of the table label and title. The label 'Table 2-3.' is followed by the title 'MINIMUM TOLERANCE LEVELS'. The title is in all caps and uses UEB. The label and title are separated by a space.

*The table label and the table title are not mathematical. UEB is used.*

*Example 17.2-2* (Table title only)

**DIVISION ( $\div$ ) TABLE**

The image shows the Braille representation of the table title 'DIVISION ( $\div$ ) TABLE'. The word 'DIVISION' is in all caps. The division symbol ( $\div$ ) is represented in Nemeth Code. The word 'TABLE' is in all caps.

*Only the math symbol requires a switch to Nemeth Code.*







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*Instructions:* Do not braille tables side-by-side even though they are printed in this manner. The first table has a table label and a caption—start in cell 7 with runovers in cell 5. The second table has a heading—center the heading. The third table is introduced with narrative text. If the body of the table can be transcribed entirely in UEB, do so.

### PRACTICE 17A

*Table 17.1-5 Values and iterations of e.*

<u>e</u>	<u>e<sup>2</sup></u>	<u>S</u>
1	1	6
2	4	24
3	9	54
4	16	96

**RTD TABLE**

<u>R</u>	<u>T</u>	<u>D</u>
30	t+2	30(t+2)
45	t	45t

Here is a table of values for  $y = x^2 - 3$ .

<u>x</u>	<u>y</u>
-1	-2
0	-3
1	-2
2	1
3	6

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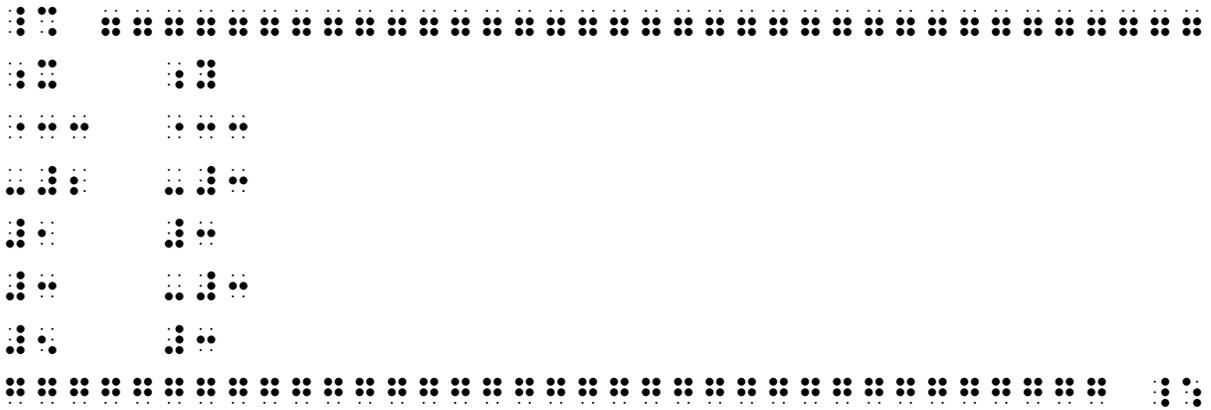




**17.6.2 Switching Within the Box Lines:** For boxed material that is transcribed completely in Nemeth Code, the opening Nemeth Code indicator is included at the beginning of the top box line, followed by a blank space. The Nemeth Code terminator is included at the end of the bottom box line, preceded by a space.

Example 17.6-2

x	y
-2	-3
1	3
3	-3
5	3



*The negative sign dictates use of Nemeth Code in this table of values. Values are left-justified in each column.*

Example 17.6-3

*Instructions:* Select inputs that have exact outputs.

a)	$x$	$f(x) = \sqrt{x}$	$(x, f(x))$
	0	0	(0, 0)
	1	1	(1, 1)
	3	1.7	(3, 1.7)
	4	2	(4, 2)
	7	2.6	(7, 2.6)
	9	3	(9, 3)





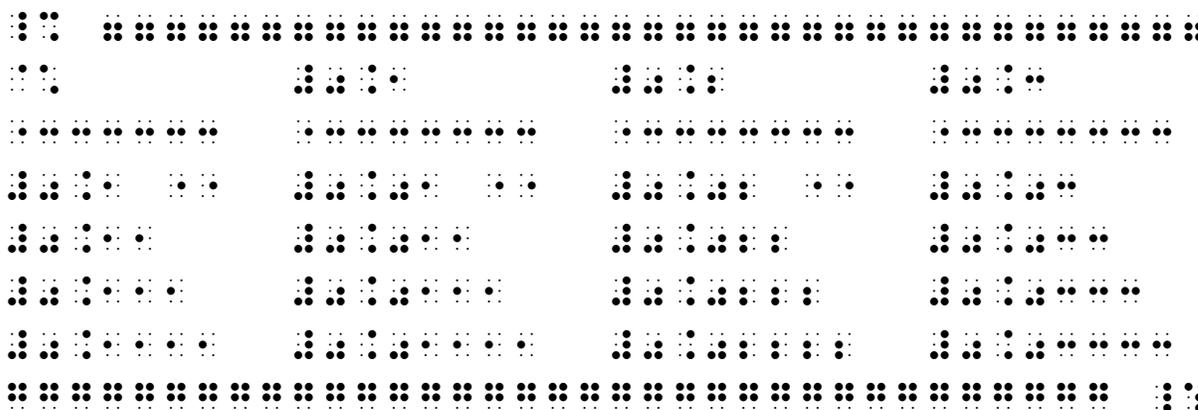




*Clarification:* This rule does not apply to tables whose entries include words, letters, or other mathematical signs such as the dollar sign, percent sign, prime, fraction line, etc. In such tables, the numeric indicator must be used throughout the table according to the rules of the Nemeth Code. The minus symbol, general omission symbol, ellipsis, and long dash are not numeric. If any of those symbols occur in a table, the numeric indicator must be used throughout the table. If guide dots are needed within any column, the use of the numeric indicator for numeric entries in all columns must follow the rules of the Nemeth Code.

*Example 17.7-2*

<b>×</b>	<b>0.1</b>	<b>0.2</b>	<b>0.3</b>
<b>0.1</b>	0.01	0.02	0.03
<b>0.11</b>	0.011	0.022	0.033
<b>0.111</b>	0.0111	0.0222	0.0333
<b>0.1111</b>	0.01111	0.02222	0.03333



*Because entries include a decimal point, the table is brailled in Nemeth Code. Because guide dots are needed, numeric indicators must be brailled.*

*Instructions:* Apply the rules regarding use/nonuse of the numeric indicator as taught in this lesson. If the body of the table can be transcribed entirely in UEB, do so. Do not braille tables side-by-side even though they are printed in this manner.

### PRACTICE 17D

Create one table which combines data from the three tables below.

<b>Age</b>	<b>Blood Pressure</b>
24	108
26	104
30	122
34	119
35	128

<b>Age</b>	<b>Height</b>
24	5'3"
26	5'9"
30	6'1"
34	5'10"
35	5'4"

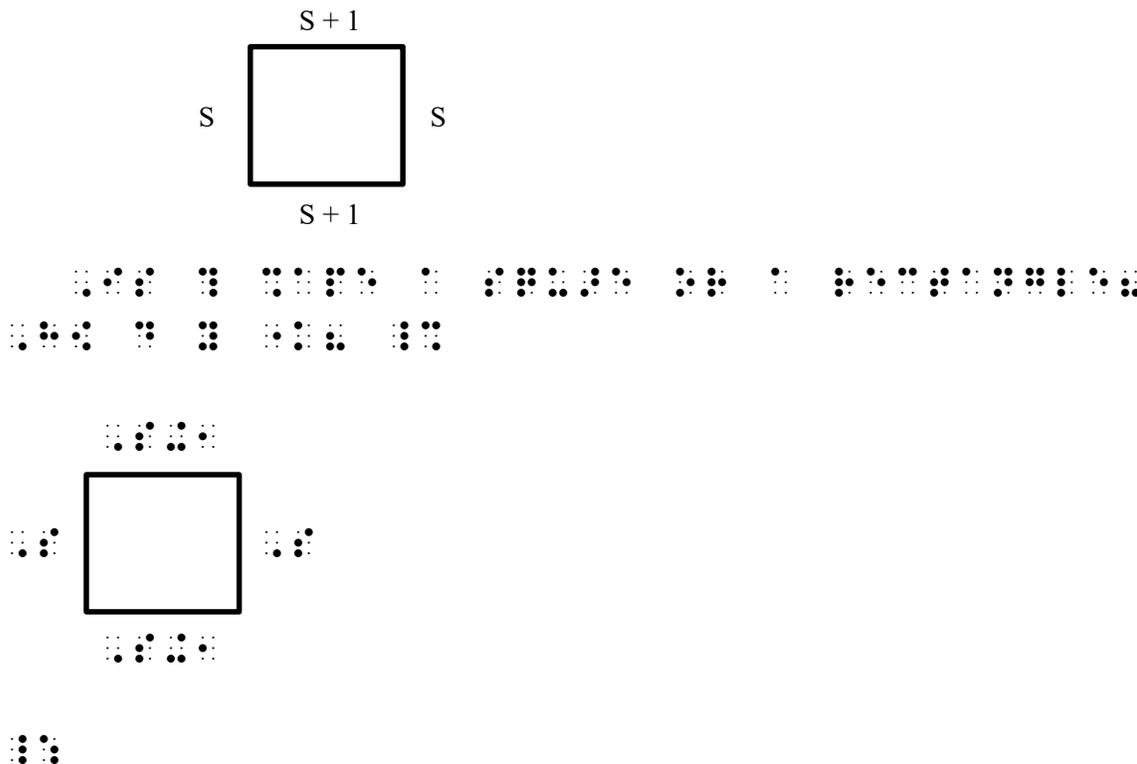
<b>Age</b>	<b>BMI</b>
24	18.4
26	33.5
30	23.8
34	19.7
35	25.0





... or the switch indicator may be placed at the end of the preceding text.

*Example 17.9-3* Is this shape a square or a rectangle? How do you know?



In Nemeth Code, when a diagram label is a single English letter in regular type, a letter indicator is required only if the letter is in lowercase (see Example 17.9-1). If the letter is capitalized, the English letter indicator is omitted (see Example 17.9-3).

When a diagram does not contain technical content such as mathematical expressions or modified numbers, do not transcribe the labels in Nemeth Code even if the body of text before and/or after the diagram is in Nemeth Code. Terminate Nemeth Code before the graphic, and reestablish it at the beginning of the following text.

**17.10 Graphic Number Lines:** Symbols used in graphic number lines are required to be listed in a separate category on the Special Symbols page, listed in braille order. Suggested wording for the symbols is given in "Guidance for Transcription Using the Nemeth Code within UEB Contexts".

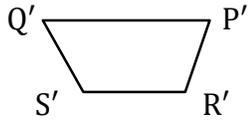
**17.11 Diagrams in Exercise Material:** If a diagram, number line, or other graphic is placed between instructions and the itemized exercise material which follows, apply the spacing and margin rules for the graphic as outlined in *Guidelines and Standards for Tactile Graphics*. Then continue Nemeth Code formatting for the exercise material.

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*Instructions:* Leave blank space for tooling the lines.

**PRACTICE 17E**

Raj transformed quadrilateral PQRS to form quadrilateral P'Q'R'S'.



## ***KEYING TECHNIQUE***

**17.12 Keying:** When space does not permit the inclusion of labels, headings, entries, etc., in a figure, determinant, matrix, or table as shown in the print copy, one or more of the labels, headings, entries, etc., may be replaced by an alphabetic or numeric key. In addition to the keying guidelines outlined in *Braille Formats*, the following rules apply in Nemeth Code.

**17.12.1 Alphabetic Key:** An alphabetic key consists of two lowercase English letters, one of which contains a dot 3 or dot 6. Letter combinations that correspond to shortforms may not be used. The combination should be suggestive of the item it represents, if possible. Quoting *Braille Formats*, "Keys work best when they are related to the terms used in the text to help the reader remember what they are. Typically a letter key will be more memorable for the reader."

Two items which are identical should have the same key assigned to them. If any of the print entries in the table are made up of two lowercase letters, an alphabetic key cannot be used. In such cases, a numeric key is the only keying option.

**17.12.2 Numeric Key:** A numeric key consists of one or more numerals brailled in the upper part of the braille cell. This number is preceded by the numeric indicator and must not be punctuated. The key numbers are placed in the figure, determinant, matrix, or table in the same position as the material which they replace. Two items which are identical should have the same key assigned to them.

**17.12.3 The Key List:** A list of numeric and/or alphabetic keys and their meanings must be included in a transcriber's note. Numeric keys are listed in numeric order. Alphabetic keys are listed in alphabetical order. Refer to *Braille Formats* for guidelines regarding the transcriber's note, margins, placement on the page, etc.

If the last listed item ends in Nemeth Code, Nemeth Code must be terminated before closing the transcriber's note.

Example 17.12-1

	<u>Town A</u>	<u>Town B</u>	<u>Town C</u>
Highest Temperature	25°C	-1°C	30°C
Lowest Temperature	13°C	-9°C	22°C
Precipitation (rain or snow)	0 cm	5 cm	2.5 cm

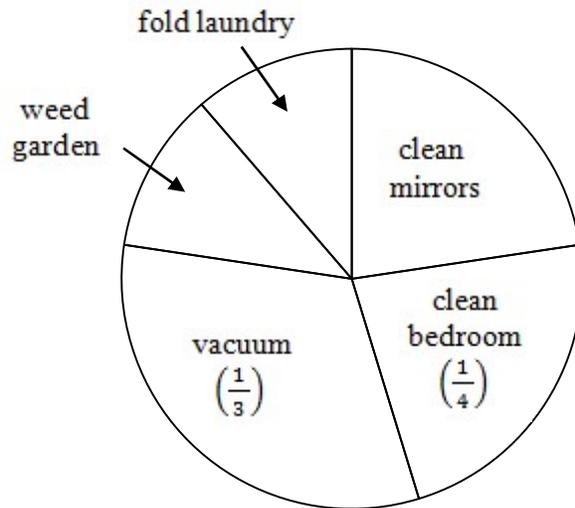
Braille representation of the table above, showing row headings and data cells.

*By keying the row headings, the layout of the print table is maintained. Because there are entries in the table consisting of two lowercase letters ("cm"), a numeric key must be used.*



Example 17.12-3

### ADYLYN'S CHORE SPINNER



Adylyn hopes she will spin *either* "vacuum" *or* "weed garden" today. What is the probability that she will spin one of these chores?

- What is  $P(\text{vacuum})$ ?
- What is  $P(\text{weed garden})$ ?
- What is  $P(\text{vacuum})$  OR  $P(\text{weed garden})$ ?



*Instructions:* Key only the first and third column heading using an alphabetic key. *Note:* "dim" is a function abbreviation. Review function notation in **Lesson 14**.

**PRACTICE 17F**

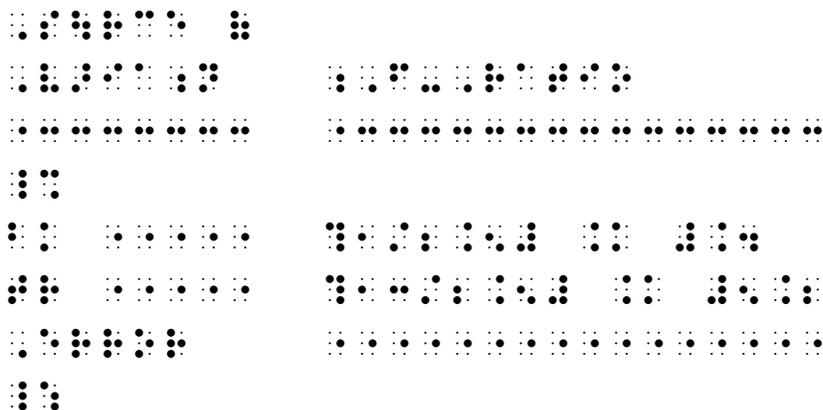
<u>Eigenvalue</u>	<u>Eigenvectors</u>	<u>dim E(<math>\lambda</math>)</u>
1, 1	$(a, b) \neq (0, 0)$	2
1, 1	$t(1, 0), t \neq 0$	1
1, 1	$t(0, 1), t \neq 0$	1
2	$t(1, 1), t \neq 0$	1
0	$t(1, -1), t \neq 0$	1

**CHALLENGE PROBLEM**

Source of Variation	Sums of Squares	D.F.	Mean Square	EMS	F-Ratio
Between blocks	$SS_i = 2$	2	$\frac{2}{2} = 1$	$\sigma^2 + \frac{3}{2} \Sigma \alpha_i^2$	$\frac{1}{2.5} = .4$
Between treatments	$SS_j = 26$	2	$\frac{26}{2} = 13$	$\sigma^2 + \frac{3}{2} \Sigma \beta_j^2$	$\frac{13}{2.5} = 5.2$
Error	$SS_{ij} = 10$	4	$\frac{10}{4} = 2.5$	$\sigma^2$	
Total	$SS = 38$	8			

This table is too wide to fit on a 40-cell-wide braille page. Although the column headings and entries could be keyed in order to maintain the same layout as shown in print, reading a table that is highly keyed is abstract and difficult to use. A solution is shown below. It combines the use of vertical division of the table, division of the long expressions in the EMS column, and keying two of the row headings.





## ***CHEMISTRY***

**17.13 Two BANA Publications:** Transcribing chemical notation requires further study and is beyond the scope of this lesson manual. The following publications offer rules and guidance:

- *Braille Code for Chemical Notation 1997*
- "Provisional Guidance for Chemistry Notation Using Nemeth in UEB Contexts" (2016)

## ***REFERENCE SYMBOLS***

The BANA Nemeth Code Technical Committee is discussing details regarding the transcription of reference symbols within mathematical context. This section will be completed after decisions are made.

*For further practice, see Appendix A—Reading Practice.*













