

Five-Step Rule and Exceptions Lesson 4 Geometry

Important Note

For all braille examples, emboss the "L4-Five-Step-Problems-Only.brf" file as a supplement to this lesson.

Background

Sometimes a symbol is placed either directly over or under an expression in print. It often takes several braille cells in the Nemeth code to describe the type of modifier and where it is placed in print.

Most modified expressions:

- Start with a multipurpose indicator (dot 5) ⠠
- End with the termination indicator (dots 1-2-4-5-6) ⠨

The Five-Step Rule is used when writing modified expressions. It is called the Five-Step Rule because there are five steps that must be used in the same order each time an expression is modified.

Step 1: Multipurpose indicator (dot 5) ⠠

Step 2: Expression being modified

Step 3: Directly-over indicator (dots 1-2-6) ⠆
or directly-under indicator (dots 1-4-6) ⠴

Step 4: Modifier

Step 5: Termination indicator (dots 1-2-4-5-6) ⠨

In this particular lesson, we will not be using the directly-under indicator.

Note that when reading these expressions in braille, the multipurpose indicator (dot 5) is often misread as a "1".

Modified expressions should be placed on a single line if possible.

Without the Five-Step Rule, modified expressions would be more difficult to read and understand.

2. line CD

- The letters in the line are capitalized.
- The two-way horizontal arrow is used to indicate the line.

 \overleftrightarrow{CD}

The following steps outline how to write Example 2. Note that in this geometry expression, the Five-Step Rule begins in step 1.

Step 1: Multipurpose indicator (dot 5)

Step 2: Expression being modified (CD)

Step 3: Directly-over indicator (dots 1-2-6) ⋮

Step 4: Two-way horizontal arrow (dots 1-2-4-6, dots 2-4-6, dots 2-5, dots 2-5, dots 1-3-5)

Step 5: Termination indicator (dots 1-2-4-5-6)

3. segment EF

- The letters in the segment are capitalized.
- The horizontal bar is used to indicate segments.

 \overline{EF}

The following steps outline how to write Example 3. Note how the Five-Step-Rule starts in step one for this geometry expression.

Step 1: Multipurpose indicator (dot 5)

Step 2: Expression being modified (EF)

Step 3: Directly-over indicator (dots 1-2-6) 

Step 4: Horizontal bar (dots 1-5-6) ∴

Step 5: Termination indicator (dots 1-2-4-5-6) 

Activity Time

Write the geometry expressions from Examples 1 to 3:

1. ray AB
2. line CD
3. segment EF