

Number Lines

A number line is a spatial arrangement so it must be preceded and followed by a blank line. Include arrowheads on the number line if they are present in print. The numeric indicator is not required before numeric labels. The first digit of a numeric label is aligned with the coordinate mark, whether or not it is preceded by a plus or minus sign. Ordinary coordinate marks are embedded in the number line. Distinctive markers (like the parenthesis marks) are moved to the line above, directly over the position they represent. If the horizontal line is too long to fit across the page, it may be divided between braille lines so that a coordinate marker is the first character in the divided number line. All components of the number line and distinctive markers must be listed on the Special Symbols page.

From the Draft of *Tactile Graphics Guidelines*:

5. Number Lines

Number lines are transcribed similarly to the axes lines of XY Cartesian graphs. The proportional spacing between units should be preserved in braille. They can be drawn using spur wheels or using symbols. For kindergarten through grade 3 the number line must be shown as a tactile graphic. For grades 4 and up number lines may be prepared using braille symbols.

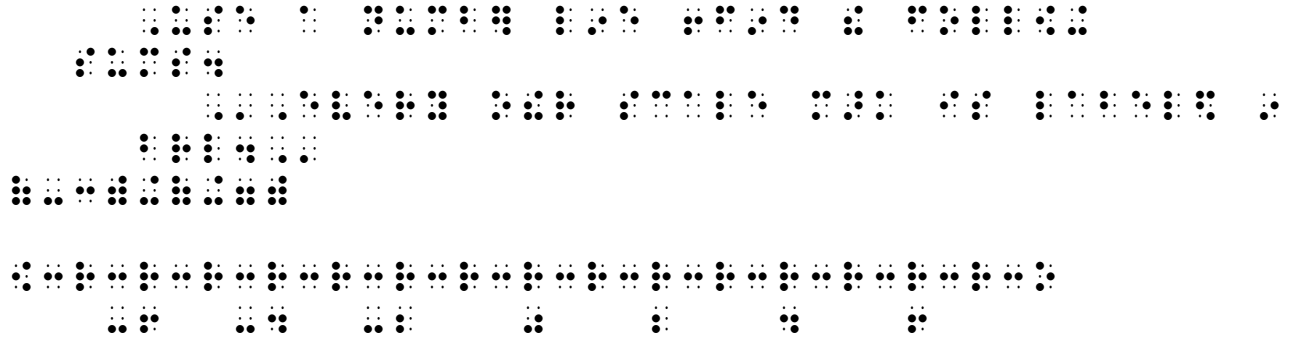
- Preceded and followed by a blank line
- The numeric indicator is not required before numeric labels.
- Include arrowheads on the number line if shown in print.
- If braille symbols are used to represent the number line, the left arrowhead is formed by dots 246; the right arrowhead by dots 135; the line by series of dots 25; and the scale marks by dots 1235. All of the symbols used for preparing a non-spurred number line must be included on the Special Symbols Page.
- Label placement: the first digit of a numeric label should be aligned with the coordinate, the minus sign or letter sign will be one cell to the left of the first digit which is under the coordinate point. An open fraction indicator should be aligned with the coordinate. If space does not permit this, you can drop and stagger every other number and connect the dropped numbers with lead lines. The lettered points above the line should align with the coordinate point thus making the letter sign or capitalization sign one cell to the left of the coordinate point.
- Division of the number line: A horizontal number line may be divided (before a coordinate) between braille lines as a last resort. Every attempt should be made to omit unused portions of the line, omission of labels, or staggering labels should be attempted before dividing the number line between lines.

NUMBER LINE SYMBOLS

Braille	Print	Meaning
⠆	—	line (axis line)
⠆	—	bold (shaded, colored) line segment
⠆	<	left-pointing arrowhead
⠆⠆	<	bold left-pointing arrowhead
⠆	>	right-pointing arrowhead
⠆⠆	>	bold right-pointing arrowhead
⠆		ordinary (regular) coordinate (scale mark, circle)

Distinctive Coordinate Markers: (placed above the number line)

⠆	○ □	open (hollow) scale mark (circle)
⠆	● ■	solid (filled-in) scale mark (circle)
⠆	(left parenthesis
⠆)	right parenthesis
⠆	[left bracket
⠆]	right bracket



It is important to not divide the number line between braille lines, especially here where the student is supposed to use the number line to find a sum. Making a number line with enough room for all of the labels would require a division. Even though the first and last scale marks are not labeled in print, that seventh mark is needed in at least one of the problems on your sample page. All of the print number lines look the same, so your braille versions should also all look the same.

Don't forget to put all of the symbols on the special symbols page. This number line uses a line segment, scale mark, right pointing arrow, left pointing arrow.

As you can see, the numeric indicator is not used below the number line and the digit itself lines up with the scale mark.

Hopefully there is enough information here to aid in brailleing any complicated number lines you come across in your transcription.