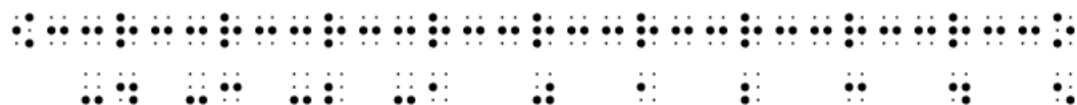


Graphing Inequalities on a Braille Number Line

Background

After completing the *Creating a Braille Number Line* and *Graphing Points on a Braille Number Line*, you are ready to start graphing inequalities on a braille number line. As a quick review, the following symbols are used to create number lines:

- ⠠ (dots 2-4-6) left-pointing arrowhead
- ⠨ (dots 2-5) line (axis line)
- ⠠⠨ (dots 1-2-3-5) coordinate scale mark
- ⠡ (dots 1-3-5) right-pointing arrowhead



The next symbols are used to graph inequalities on the number line:

- ⠠⠠⠠⠠⠠⠠ (dots 1-2-3-4-5-6) solid, filled-in, or closed circle (point included) placed above the number line, which you already learned about
- ⠠⠠⠠⠠⠠⠠ (dots 1-3-4-6) open circle (point not included) placed above the number line, which is only necessary when graphing an inequality involving $<$, $>$, or "not equal to"
- ⠠⠠⠠⠠⠠⠠ (dots 2-3-5-6) bold shaded line segment, which is used for shading the rest of the points included in the solution on the number line itself
- ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠ (dots 2-4-6 twice) bold left-pointing arrowhead, which is placed on the left side of the number line
- ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠ (dots 1-3-5 twice) bold right-pointing arrowhead, which is placed on the right side of the number line

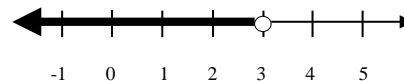
General Instructions

- When graphing points on a number line, first space down two lines.
- Create your number line.
- Place the proper coordinate under each scale mark.
- Above the number line, indicate whether your solution will include an open or closed circle at the appropriate coordinate(s).

- "Shade" on the number line all of the points that represent the solution, except for the area directly under the boundary point(s) designated with open or closed circles.
- To designate that the shading continues infinitely to the left or right, use an additional appropriate arrowhead (or bold left- or right-pointing arrowhead). If the graph needs an additional left-pointing arrowhead, you will need to think ahead and include it when you create the number line or always leave an extra space in front just in case you discover that you need one later.

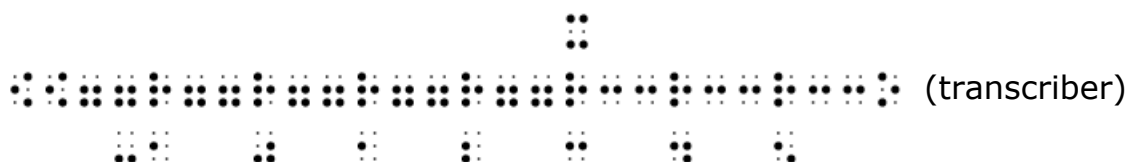
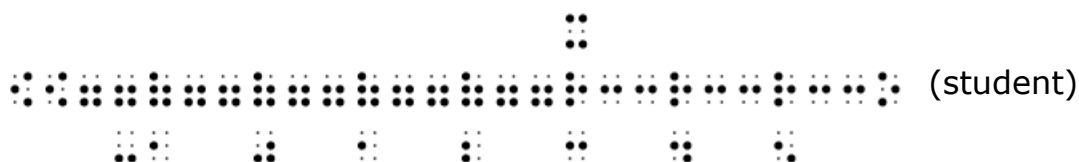
Detailed Example

1. Graph $x < 3$ on a number line.



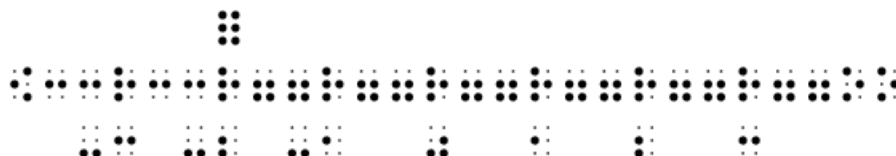
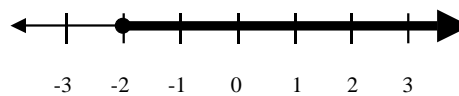
Construct a number line and space it such that you could have at least a couple of coordinates larger than 3 and a few smaller than 3; perhaps label it from -1 through 5, and add an additional left pointing arrowhead (or bold left-pointing arrowhead). Then, braille an open circle (point not included) above the scale mark at coordinate 3. Finally, starting just to the right of the 2nd left-pointing arrow, "shade" the number line all the way up to, but not including, the 3.

You may find it easier to shade on top of scale marks, but transcribers do not as shown in the graphs below. Our examples will be done as a transcriber, since that is the way you will see number lines graphed in a textbook or on a test.

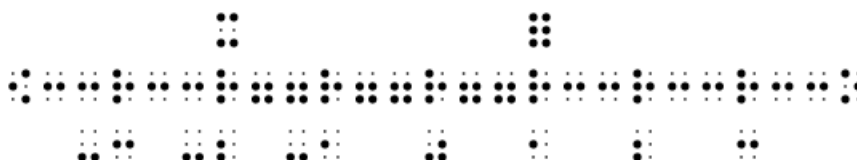
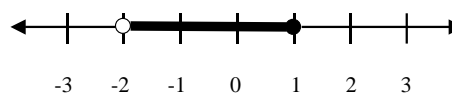


More Examples

2. Graph $x \geq -2$.



3. Graph $-2 < x \leq 1$.



4. Graph $x < 100$ or $x > 300$.

