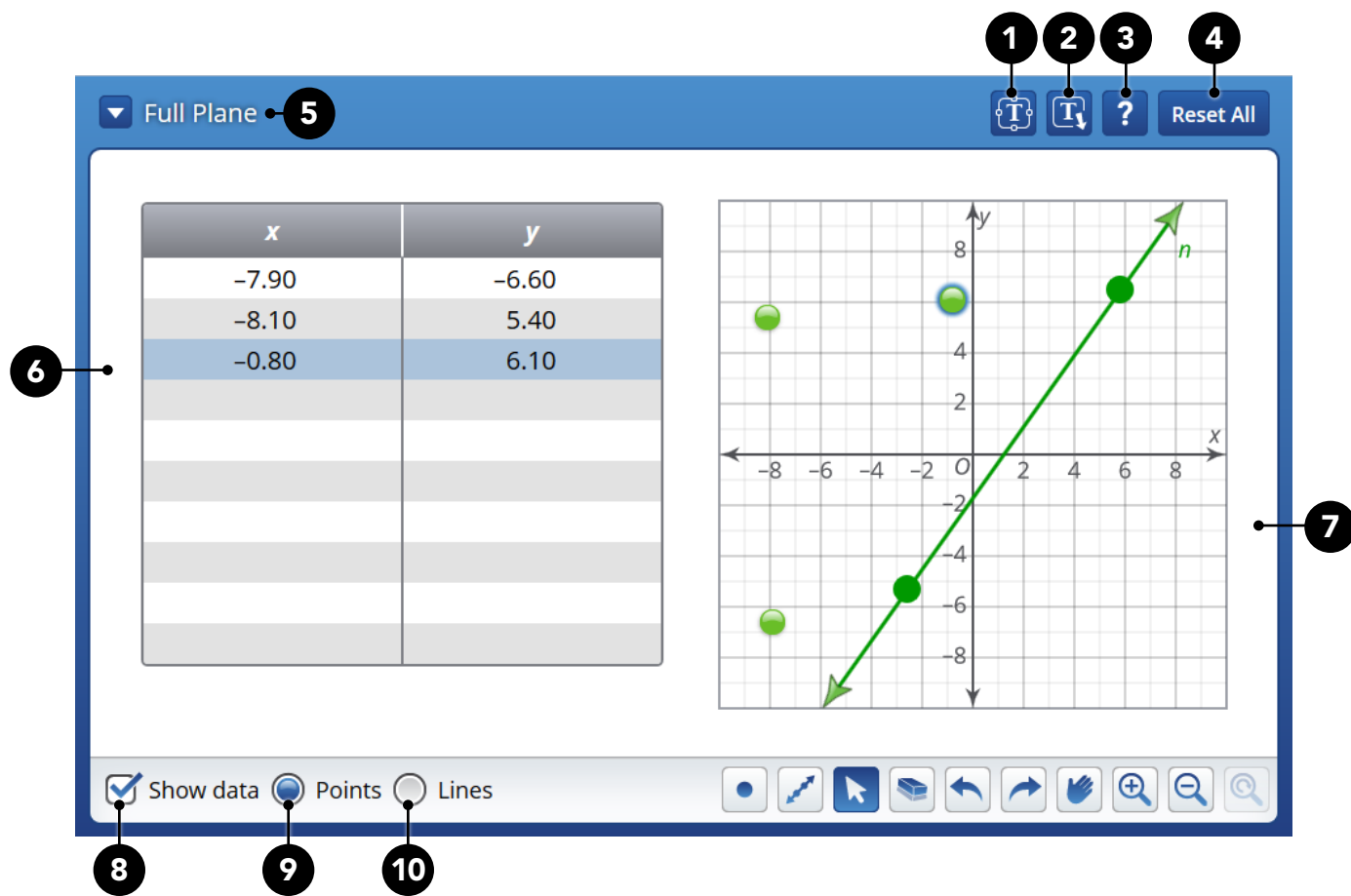# Coordinate Grapher

In this tool, you can construct lines, inequalities, or a system of lines or inequalities and view their solutions. You can also plot and move data points.

1. **Textbox** Add comments to the activity area.

2. **Textbox with Arrow** Add comments to the activity area, using the arrow to focus attention on a particular area.

3. **Help** Launch a help file PDF for the tool.

4. **Reset All** Reset all current work in the activity area for the tool back to the default settings.

5. **Mode Drop-down** Shows all the available modes of the Coordinate Grapher tool. Selecting a mode will open the tool to that mode, and save any current work in the mode you were previously working in. There are two modes in the Coordinate Grapher tool: Full Plane and First Quadrant. All features listed are present in both modes.

6. **Data Panel** When selected, the show data area shows either a table of values of the plotted points or the lines menu.
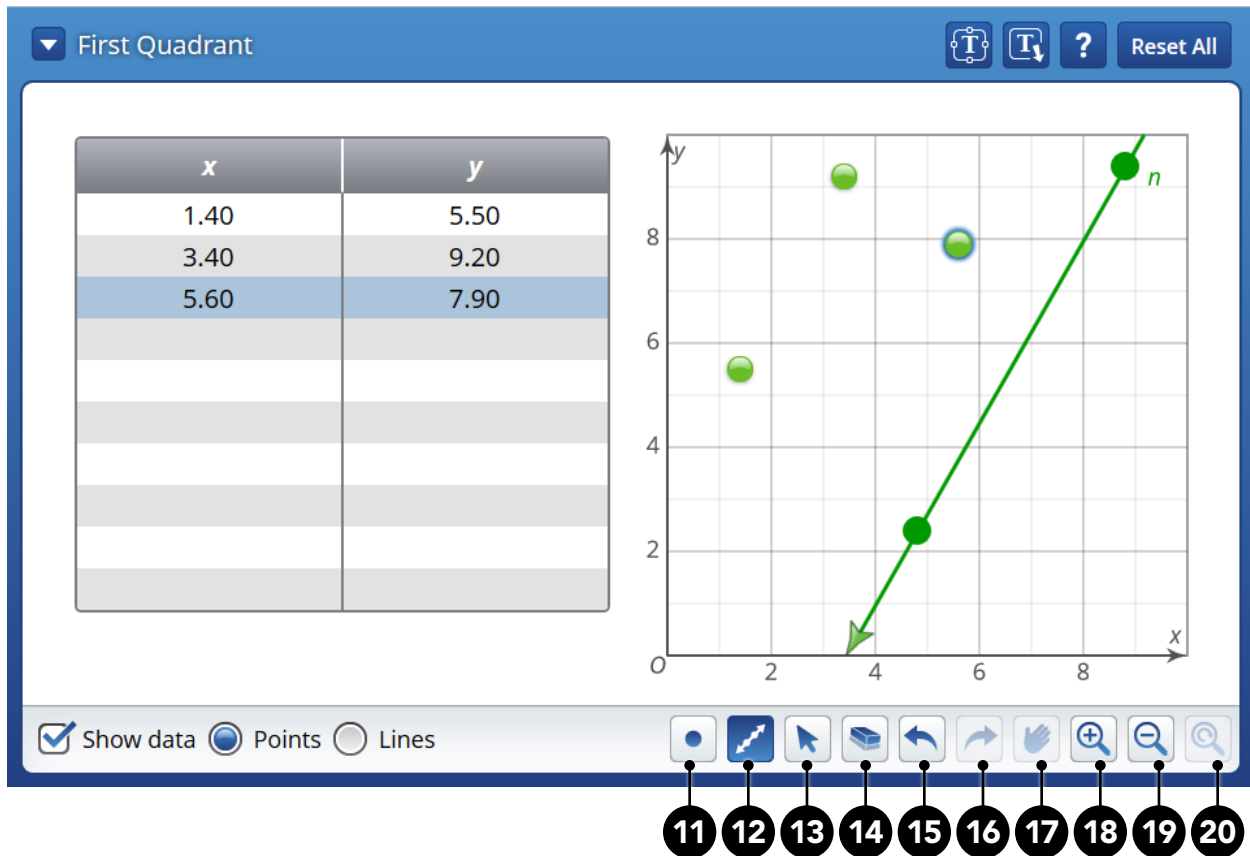
Coordinate Grapher

7. **Coordinate Graph** The area where you can graph points and lines in either the full plane or first quadrant modes. In the full mode, the range of values you can graph is between –100.00 and 100.00 along each axis. In the first quadrant mode, the range of values you can graph is between 0 and 100 along each axis.

8. **Show Data Checkbox** You can show or hide the data panel by pressing the checkbox. When the checkbox is selected, you can view either a table of values of the plotted points, or the lines menu.

9. **Point Table Button** When the show data checkbox is selected, and you press the point table button, a table will appear in the data panel. The table is populated with the coordinates of any points you have added onto the coordinate graph. Selecting a row in the table will highlight the respective point on the graph at the right.

10. **Lines Menu Button** When the show data checkbox is selected, and you press the lines menu button, a series of options appears in the data panel.

Coordinate Grapher

(continued)

First Quadrant 〔T〕 〔T↓〕 **?** **Reset All**

x	y
1.40	5.50
3.40	9.20
5.60	7.90

☑ Show data ⦿ Points ◯ Lines

(11) (12) (13) (14) (15) (16) (17) (18) (19) (20)

11. **Point Button** When the point button is selected, each press on the coordinate graph will add a point at those coordinates. You can add up to 10 points to the graph. Once a point is on the graph you can use the pointer to move the point around the graph, and its value in the table will update to match.

12. **Line Button** When the line button is selected, the first press on the graph will add the first control point of the line, and the second press will add the second control point and will draw a line through the two control points. You can add up to 5 lines to the graph. Once a line is on the graph, you can move the line without changing its orientation by dragging the line with the pointer. You can also change the orientation of the line by dragging one of two control points on the line with the pointer.

13. **Pointer** Use the pointer to select and manipulate points and lines on the coordinate graph. When you select a point on the coordinate graph with the pointer, you can show the coordinates of the selected point, or choose to show or hide the coordinates of all points on the graph. When you select one of the control points on a line on the graph, a menu of options for the line will appear. Using the line menu, you can show the coordinates of the control points, show the rise and run of the line between the control points, draw a line parallel to the current line, or shade the half-plane (if the line equation is an inequality).

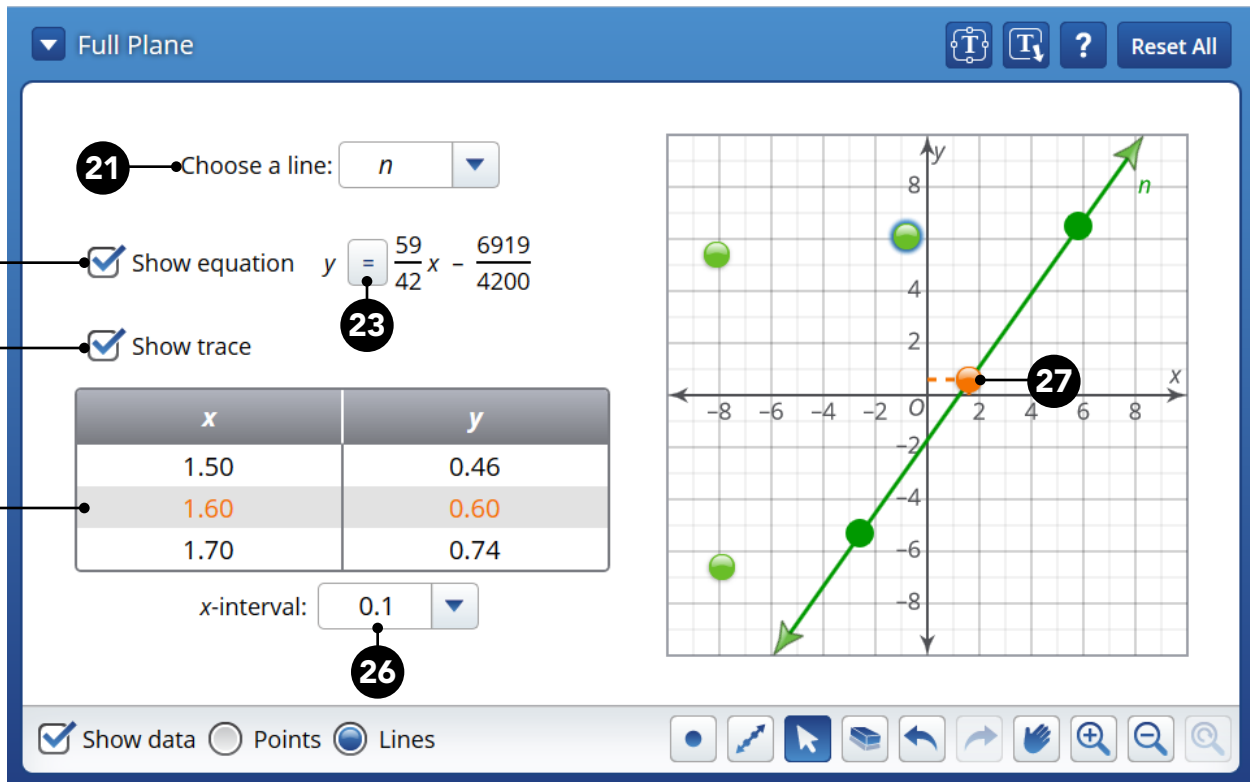**14. Eraser** Using the eraser, you can remove any points or lines on the coordinate graph by selecting them.

15. Undo Button You can use the undo button to remove the most recent change(s) to the tool. Only items on the graph are affected using the undo button.

16. Redo Button You can use the redo button to restore the most recent change(s) to the tool. Only items on the graph are affected using the undo button.

17. Pan Button Using the pan button, you can change the area of the graph you are viewing within the current zoom level by dragging the graph.

18. Zoom-In Button Using the zoom-in button, you can zoom in to view a small portion of the graph. At the maximum zoom-in, you can view a range of 10 units along each axis in full plane mode, and a range of 5 units along each axis in first quadrant mode.

19. Zoom-Out Button Using the zoom-out button, you can zoom out to view a larger portion of the graph. At the maximum zoom-out, you can view values from –100 to 100 along each axis in the full plane mode and 0 to 100 along each axis in the first quadrant mode.

20. Reset-Zoom Button Using the reset zoom button, you can restore the default zoom level in the tool. The default zoom view is from –10 to 10 along each axis in full plane mode, and 0 to 10 along each axis in first quadrant mode.

Coordinate Grapher

(continued)

21. **Line Selection Drop-Down Menu** You can choose the line you wish to review.

22. **Show Equation Checkbox** When selected, will show the equation of the selected line. As you manipulate the line on the coordinate graph, the equation will update to match the current position of the line.

23. **Equality Symbol Drop-Down Menu** You can change the equality symbol of the selected line. You can choose equal to, greater than, greater than or equal to, less than, or less than or equal to symbols from the drop-down.

24. **Show Trace Checkbox** When selected, will show the trace table and trace point on the graph.

25. **Trace Table** Shows three sets of coordinates related to the trace point. The coordinate pair in orange represents the trace point on the graph, and the other coordinate pairs are points along the line, the distance of the interval of the x-value equidistant from the trace point.

26. **Trace Table Interval Drop-Down Menu** You can change the interval of the distance between the x-values of the points in the trace table from 0.1, 0.5, and 1.0.

27. **Trace Point** When selected, the trace point appears orange on the graph. You can drag the trace point along the line to see it the y-value at a particular x-value.