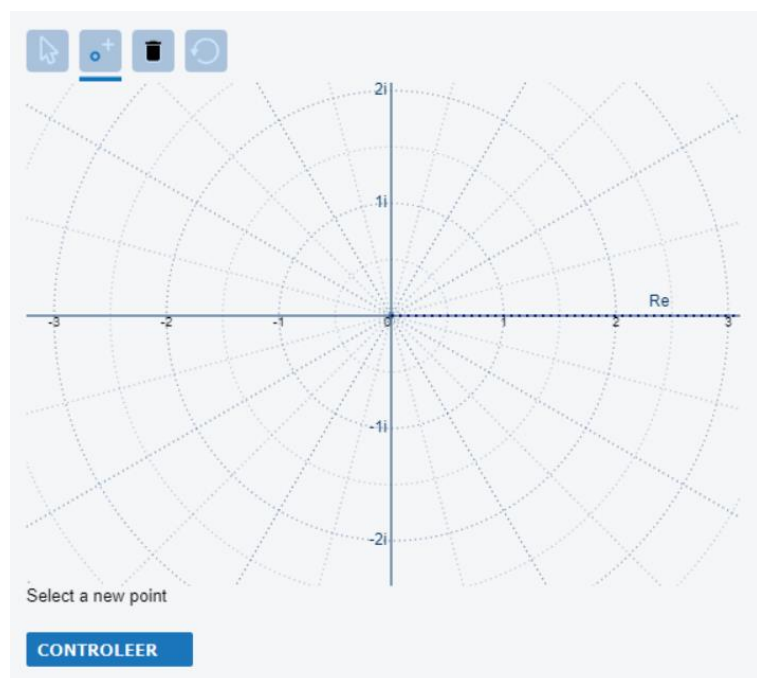


Student instruction: Numworx Geodefiner








Version 2020-10-26




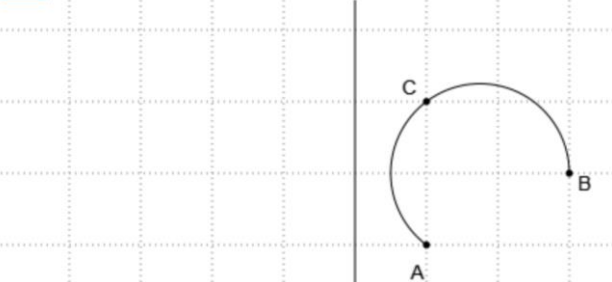












The Geodefiner is a widget for geometric assignments. It has so many settings that a separate instruction is devoted to it.








An example of an exercise is displayed. The student can select several buttons/tools on the top of the Geodefiner. After selecting a button, an help instruction of the button will appear under the figure. In this case the Point-button is selected and the help instruction is to “select a new point”.



The overview below contains the names and functions of the buttons.

Button	Name	Function
	Select	Drag given objects (provided that 'draggable' is checked for these given objects). Drag self-created objects.
	Point	Make a point, make a point on a line, make an intersection point.
	Line	Construct a line through two points.
	Halfline	Construct a half line using two points: the first (given) point is the starting point.
	Segment	Construct a segment between two (given) points.
	Perpendicular	Construct a line perpendicular to a (given) line (or line segment or half line).
	Parallel	To construct a line parallel to a (given) line (line segment or half line).

	Circle	<p>Make a circle using two (given) points: the first point is the center and the second point the radius.</p> <p>OR</p> <p>Select a line segment, click on the Circle button and select the center.</p>
	Arc	<p>Three points are needed for an arc. To get an arc on a line segment AB you must first select A (or B), then point C, then point B (or A).</p>  
	Polygon	Create a polygon using existing points or new points.
	Midpoint	<p>Create a point that lies between two points.</p> <p>Create a point in the middle of a segment.</p> <p>Find the center of a circle.</p>
	Bisector	Creating a bisector, for example, of angle BAC. For this, the points B, A and C must be selected successively (or C, A, B).
	Reflection point	For drawing the reflection of an object relative to a line, to a point or to a circle. But also relative to a vector (=translation). The line of reflection (or point or circle) must be selected first.
	Conicsection	To construct a conic section using five (given) points.
	Poleline	Make a point outside the circle. Select that point and the circle and click on the Poleline button.
	Distance	To obtain the distance between two points or to obtain the circumference of a circle. First select the objects with the Select button.
	Area	To obtain the area of a triangle or circle. First select the objects with the Select button.
	Angle	To obtain the size of an angle between two lines (in radians). Select the lines first with the Select button.
	Vector	Obtain the vector (notation). Select the lines first with the Select button.
	Trails on/off	Leave a trail. The track disappears when a student goes to another page. First select the objects with the Select button.
	Text	Write a text to label points.

	Definition	Enter a function. Can be entered with the $f(x)$ notation as well as with $y=...$
	Pan	Move the drawing field.
	Delete	Delete self-created objects.
	Reset	Back to the given initial situation.
	Circle with specified radius	Create a circle with a given radius.
	Colour palette	Select an object and change its colour.
	Stroke palette	Select a line and change its continuity.