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CanvasPositionTranslator is a class containing methods for translating the pixel-coordinates in a canvas to normalized world-coordinates. Also includes methods for drawing lines and geometric shapes. Methods included are:

Defines the range of values for the x-axis
❖ xRange(x1, x2)

Defines the range of values for the y-axis
❖ yRange(y1, y2)

Defines the spacing between the canvas-edge and coordinate-plot for the x-axis
❖ xMargin(left, right)

Defines the spacing between the canvas-edge and coordinate-plot for the y-axis
❖ yMargin(bottom, top)

Defines how much the coordinate-plot should be rotated relative to the canvas
❖ rotate(angle)

Draws lines showing the xy-positions
❖ drawGridlines(showOrigin, showPerimeter)

Three methods that work together to create unique shapes. DrawLine can be run several times between drawLineStart and drawLineEnd
❖ drawLineStart(x, y)
❖ drawLine(x, y, colour, width, dotted)
❖ drawLineEnd(fill)

Draws a line-segment from point1 to point2
❖ drawLineSegment(x1, y1, x2, y2, colour, width, dotted)

Writes text in canvas
❖ text(x, y, text, colour, font, angle)

Draws shapes
❖ drawSquare(x1, y1, x2, y2, colour, fill)
❖ drawCircle(x, y, xRadius, yRadius, colour, fill)
❖ drawPolygon (xArray, yArray, colour, fill)

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canvasGraphs is a class-extension of **canvasPositionTranslator** containing methods for visualizing data from one or more arrays. Methods included are:

- ❖ dataset(graphID, **dataset1**, **dataset2**)
- ❖ drawBarGraph(graphID, xTitle, yTitle)
- ❖ drawPieChart(graphID)
- ❖ drawLineGraph(graphID, xTitle, yTitle)
- ❖ drawScatterPlot(graphID, xTitle, yTitle)

CartesianMethods is a class-extension of **canvasPositionTranslator** containing numerical methods for visualizing and calculating new graphs of functions. Methods included are:

- ❖ drawGraph
- ❖ drawDerivative
- ❖ drawTangent
- ❖ drawPointonGraph

NumericalMethods is a set of functions for simplifying javascript syntax. Fuctions are included are:

- ❖ $(id)
- ❖ $set(attribute, id, value)
- ❖ $get(attribute, id)
- ❖ $setClick(id, action)
- ❖ $getClick(id)
- ❖ $uniqueData(**array**)
- ❖ randomNumber(min, max)
- ❖ randomColour(shade)
- ❖ randomOrder(**array**)

NoHTML4UI is a class containing methods for creating HTML-fields for input and output, with javascript. Methods included are:

- ❖ text(**inputIdArray**)
- ❖ list(**inputIdArray**, **dropdownValueArray**)
- ❖ checkbox(**inputIdArray**)
- ❖ output(text, empty)
- ❖ removeInput(**inputIdArray**)