

	CLASS OF FUNCTION	MATHEMATICA SYNTAX TO PRODUCE PICTURE
CURVES	Calculus I/II function $f : \mathbb{R} \rightarrow \mathbb{R}$, i.e. $y = f(x)$	<code>Plot[f(x), {x, xmin, xmax}]</code>
	Graph of equation $f(x, y) = c$	<code>ContourPlot[f(x, y) == c, {x, xmin, xmax}, {y, ymin, ymax}]</code>
	Polar function $r = f(\theta)$	<code>PolarPlot[f(theta), {theta, theta_min, theta_max}]</code>
	Parameterized curve in a plane $f : \mathbb{R} \rightarrow \mathbb{R}^2$, i.e. $(x, y) = f(t)$	<code>ParametricPlot[f(t), {t, tmin, tmax}]</code> <code>ParametricPlot[{x(t), y(t)}, {t, tmin, tmax}]</code>
	Parameterized curve in 3D space $f : \mathbb{R} \rightarrow \mathbb{R}^3$, i.e. $(x, y, z) = f(t)$	<code>ParametricPlot3D[{x(t), y(t), z(t)}, {t, tmin, tmax}]</code>
PICTURES ASSOCIATED TO SURFACES	surface $f : \mathbb{R}^2 \rightarrow \mathbb{R}$, i.e. $z = f(x, y)$	graph of surface: <code>Plot3D[f(x, y), {x, xmin, xmax}, {y, ymin, ymax}]</code> graphs of traces parallel to the x -axis, where y ranges from $ymin$ to $ymax$: <code>Manipulate[Plot[f(x, y), {x, xmin, xmax}, PlotRange -> {zmin, zmax}, AspectRatio -> Automatic], {y, ymin, ymax}]</code> graphs of traces parallel to the y -axis, where x ranges from $xmin$ to $xmax$: <code>Manipulate[Plot[f(x, y), {y, ymin, ymax}, PlotRange -> {zmin, zmax}, AspectRatio -> Automatic], {x, xmin, xmax}]</code>
		level curve to surface at height $z = c$: <code>ContourPlot[f(x, y) == c, {x, xmin, xmax}, {y, ymin, ymax}]</code> contour plot of surface with z -values from a to b : <code>ContourPlot[f(x, y) == Range[a, b], {x, xmin, xmax}, {y, ymin, ymax}]</code> shaded contour plot with labelled contours: <code>ContourPlot[f(x, y), {x, xmin, xmax}, {y, ymin, ymax}, ContourLabels -> True]</code>
		level surface at $w = c$: <code>ContourPlot3D[f(x, y, z) == c, {x, xmin, xmax}, {y, ymin, ymax}, {z, zmin, zmax}]</code>
VECTOR FIELDS	planar vector field $f : \mathbb{R}^2 \rightarrow \mathbb{R}^2$, i.e. $(u, v) = f(x, y)$	<code>VectorPlot[f(x, y), {x, xmin, xmax}, {y, ymin, ymax}]</code>
	3D vector field $f : \mathbb{R}^3 \rightarrow \mathbb{R}^3$, i.e. $(u, v, w) = f(x, y, z)$	<code>VectorPlot3D[f(x, y, z), {x, xmin, xmax}, {y, ymin, ymax}, {z, zmin, zmax}]</code>