

# mk\_graph Manual

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# 1 Function Manual

## 1.1 Outline

## 1.2 Notation

## 1.3 Functions

### 1.3.1 mtg.plot3d

`mtg.plot3d(formula)`  
 :: Draw a graph of *formula*

`mtg.plot3d(formula | options)`  
 :: Draw a graph of *formula*. Optional arguments are described below.

*return*      List

*formula*      Expression or quote data. It should be a function in *x*, *y*.

*optinal arguments*

*domain*      List. `[[xmin,xmax],[ymin,ymax]]`

*mesh*        Natural number. Division number to mesh the region.

*fit*          When it is 1,  $(\max+\min)/2$  is moved to the orgin in *z*.

- Details have not been written. See examples.

```
[1210] import("mt_graph.rr");
[1211] mtg.test2();
[1210] import("mt_graph.rr");
[1211] mtg.plot3d(x^2-y^2);
[1210] import("mt_graph.rr");
[1211] mtg.plot3d(x^2-y^2 | domain=[[-1,1],[1,1]]);
[1210] import("mt_graph.rr");
[1211] def myfunc(X,Y) { if (X*Y < 0) return 0; else 1;}
[1212] mtg.plot3d(quote(myfunc(x,y)*x*y));
```

### 1.3.2 mtp.parametric\_plot3d

`mtp.parametric_plot3d(formula)`  
 :: Draw a graph of *formula*

`mtp.parametric_plot3d(formula | options)`  
 :: Draw a graph of *formula*. Optinal arguments are described below.

*return*      List

*formula*      Expression or quote data. It should be a function in *s*, *t*.

*optinal arguments*

*domain*      List. `[[xmin,xmax],[ymin,ymax]]`

`mesh`        Natural number. Division number to mesh the region.

`fitting`    If it is set to 0, then automatic fitting to the z-direction is not done.

- Details have not been written. See examples.

```
[1210] import("mt_graph.rr");
[1211] mtp.test5();    /* Klein bottle (8 figure) */
[1210] import("mt_graph.rr");
[1211] mtp.parametric_plot3d([s,t,s^2-t^2]);
[1210] import("mt_graph.rr");
[1211] def myfunc(X,Y) { if (X*Y < 0) return 0; else 1;}
[1212] mtp.parametric_plot3d([s,t,quote(myfunc(s,t)*s*t) | fitting=0);
```

# Index

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