Ellipse Tool

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This script is intended to help users draw ellipses. This can be done with SketchUp (drawing a circle and scale it) but I thought this tool will be more user-friendly and provides more options than a simple tool.
Options give you the opportunity to:

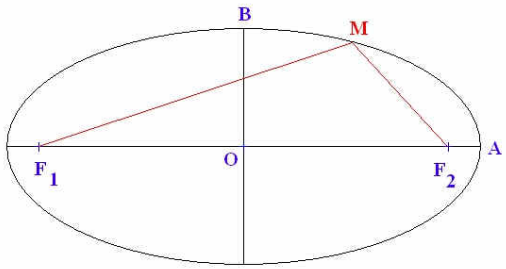
- create ellipses in 3D, as sets of segments or as curves,
- create a face when the ellipse is draw,
- create a group with ellipse and face, or not,
- enter a precision parameter to draw very accurate ellipses.

Installation:

Unzip archive in your "Plugins" folder. Quite simple...
You should have 2 files there: ellipse.rb (the script) and ellipse.pdf (this file). You can move this file where convenient, and ellipse.rb will autoload each time you start SketchUp as long as it is in the Plugins folder.

Geometry:

What is an ellipse ? It is the the locus of points on a plane where the sum of the distances from any point M on the curve to two fixed points F1 and F2 is constant. The two fixed points are called **foci** (plural of **focus**).

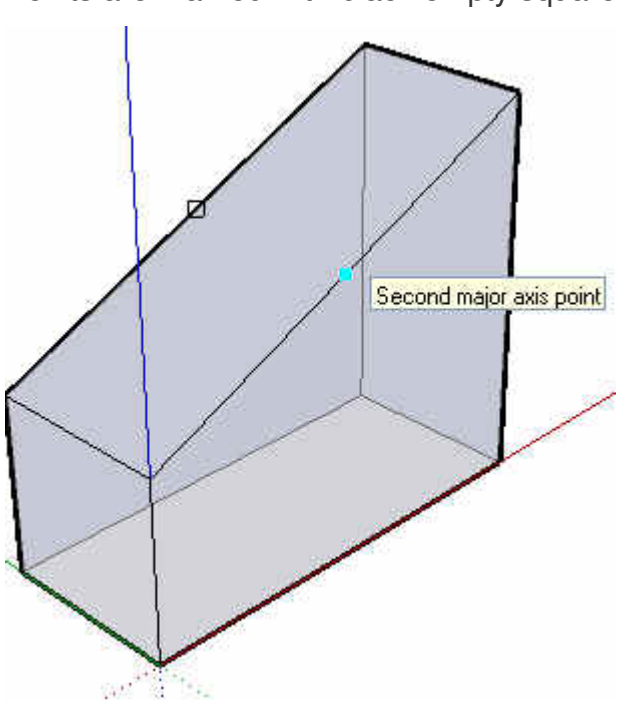


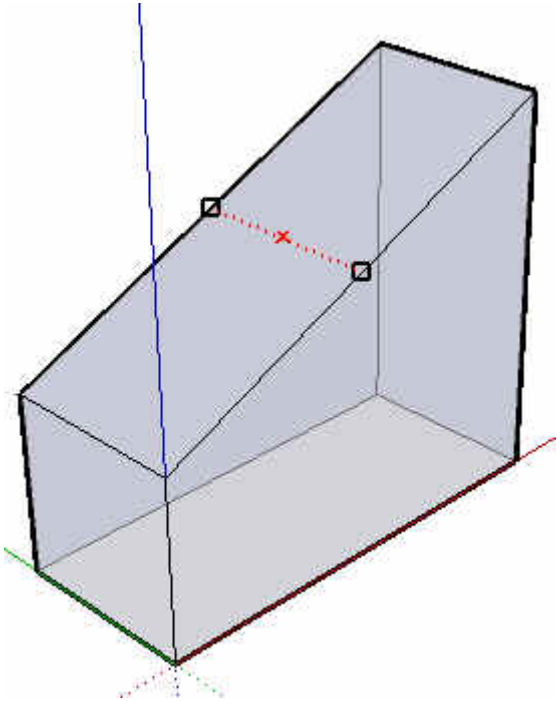
Usage:

Select "Ellipse" from the "Draw" menu:

In the following example, we will create an ellipse that is exactly contained within the roof face.

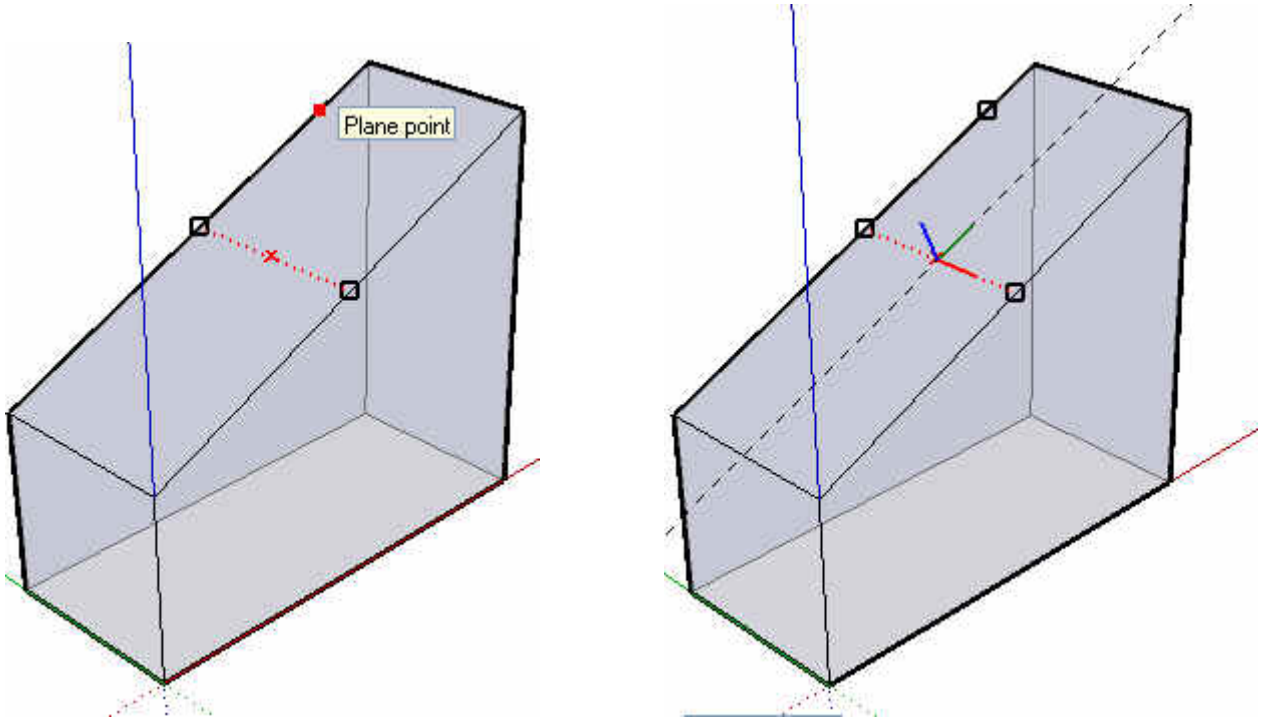
1. The first two clicks define the major axis of the ellipse (not the foci).
Points are marked with black empty squares, and inference is available.





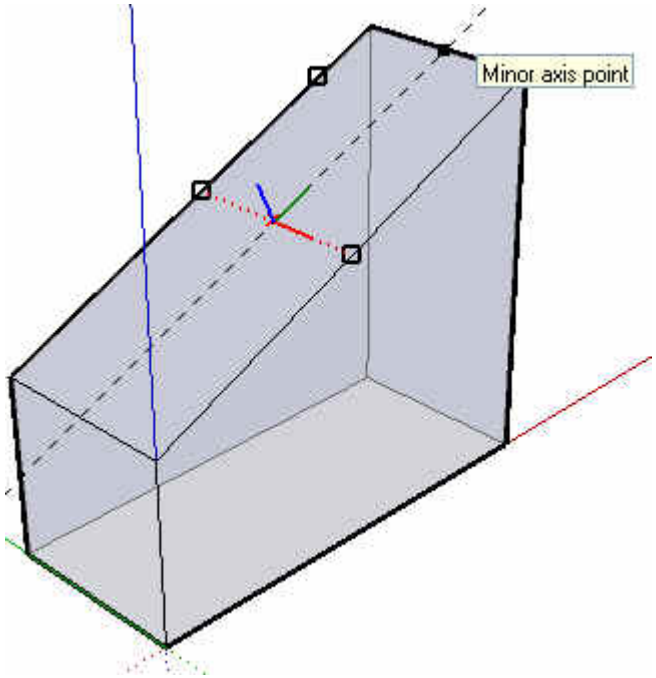
When the second point is clicked, a red dashed line is draw between the 2 points, and a red cross is displayed at the middle of the 2 points. In this example, you would have to click the 2 midpoints of the edges of the roof.

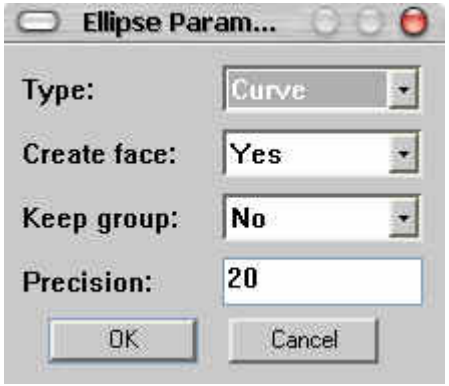
2. The third point defines the plane orientation for the ellipse.
You can click every point on the plane, either an end, a midpoint, an "on face" point, etc.

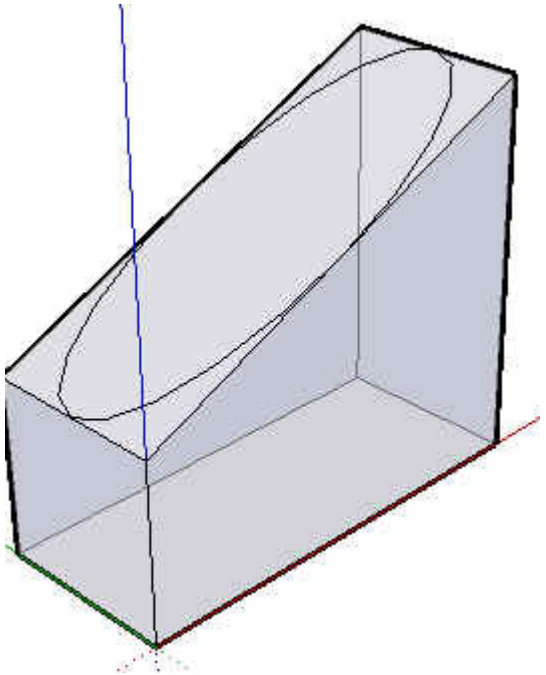


When the third point is clicked, a temporary axis system is displayed and a construction line indicates where you can click the fourth point. This help line is perpendicular to the red dashed line and crosses the midpoint.

3. The fourth point defines the halp minor axis of the ellipse.
You can click every point on or out of the plane. The distance between the midpoint and your click will define the half length of the minor axis.



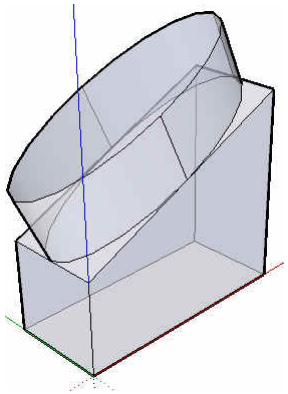


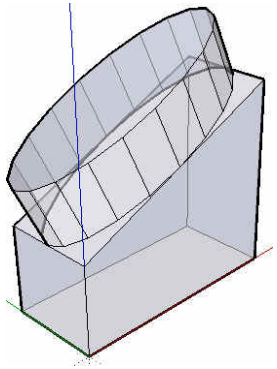


In this example you would ave to click the intersection of the construction line and the ridge of the roof.
Then a dialog is displayed with the following options:

Type:
Curve: creates a curve objetct to draw the ellipse
Segments: creates a set of edges to draw the ellipse

A curve ellipse, once extruded, gives the left volume
A segmented ellipse, once extruded, gives the right volume





Create face:
Yes: creates a face within the ellipse
No: doesn't.

Keep group:
Yes: objects are drawn in a group. Select this option if you want to keep the group when the command ends.
No: explodes the group when the command ends.

Precision:
Enter a number. The higher the number, the more accurate the ellipse, default: 20.