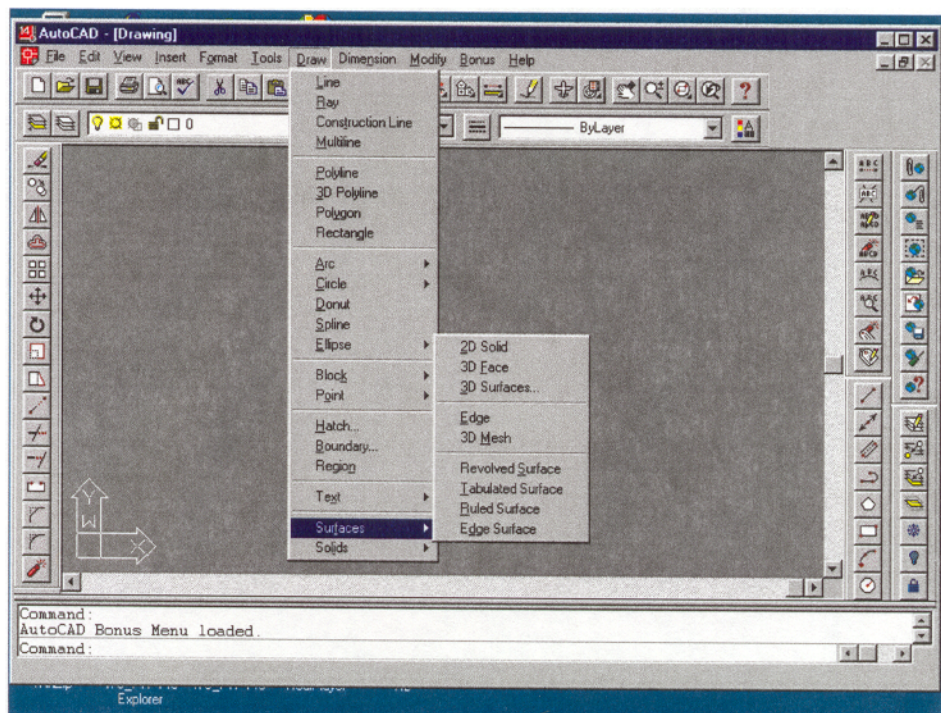


Surface Modeling

Categories of surfaces

Surface with straight edges	Meshed surfaces	Geometrically defined meshes surfaces	Surface model primitives
3Dface	3Dmesh, Pface	Edgesurf, Rulesurf, Revsurf, Tabsurf	3D objects Thickness, solid



3Dface:

Command: *3dface*

First point: *pick*

Second point: *.xy*

of *pick*

(need Z): 3

Third point: *.xz*

of *pick*

(need Y): 1

Fourth point: *.yz*

of *pick*

(need X): 2

Note: 3Dface can be used only for construction of 3D surfaces with straight edges.

Ai_mesh:

Command: *ai_mesh*

First point: *pick*

Second point: *.xy*

of *pick*

(need Z): 3

Third point: *.xz*

of *pick*

(need Y): 1

Fourth point: *.yz*

of *pick*

(need X): 2

Mesh M size: *10*

Mesh N size: *15*

Command: *ai_mesh*

First point: *1,1,0*

Second point: 5,1,1

Third point: 5,5,5

Fourth point: 1,2,4

Mesh M size: 8

Mesh N size: 6

Note: ai-mesh can be used only for construction of 3D surfaces with straight edges.

3dmesh

Command: 3dmesh

Mesh M size: 5

Mesh N size: 8

Vertex (0,0):

Vertex (0,1):

Vertex (0,2):

Vertex (0,3):

Vertex (0,4):

Vertex (0,5):

Vertex (1,0):

(continues sequence for all vertices in the row)

(sequence continues for all rows)

pface

polyface mesh designed for other software developers.

Geometrically Defined Meshes (pp. 837)

Surftab1 and *Surftab2* define the number of vertices for other commands such as *edgesurf*, *rulesurf*, *tabsurf*, and *revsurf*.

Command: *surftab1* -- first edge picked.
New value for SURFTAB1 <6>: (value)
Command: *surftab2* -- second edge picked.
New value for SURFTAB1 <6>: (value)

Exercise 1:

Command: *edgesurf* -- for four edges
Select edge 1: PICK
Select edge 2: PICK
Select edge 3: PICK
Select edge 4: PICK

Command: *rulesurf* -- for two edges only
Select first defining curve: PICK
Select second defining curve: PICK

Note 1: *rulesurf* connects the ends of two lines. So for the same two lines if they ended differently, the surface formed by the two lines will be different.

Note 2: SURFTAB2 is not used when using *rulesurf* command.

Command: *tabsurf*
Select path curve: PICK
Select direction vector: PICK

Note 1: the direction vector must be in 2D.

Note 2: SURFTAB2 is not used when using *rulesurf* command.

Command: *revsurf*
Select path curve: PICK
Select axis of revolution: PICK
Start angle <0>: (value)
Included angle (+ccw, -cw)<Full circle>(value)

Note: SURFTAB1 is to define the axis of revolution, SURFTAB2 is to define path curve.