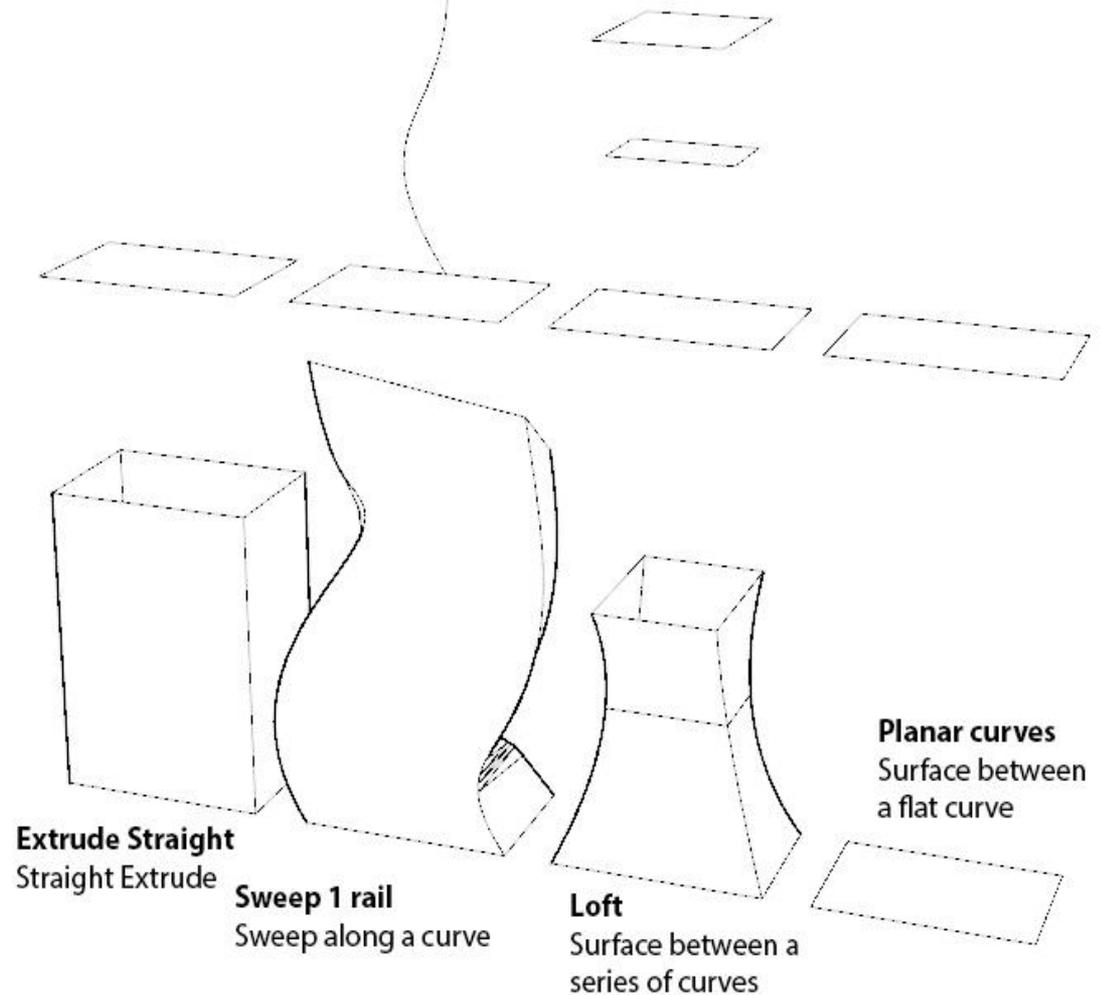
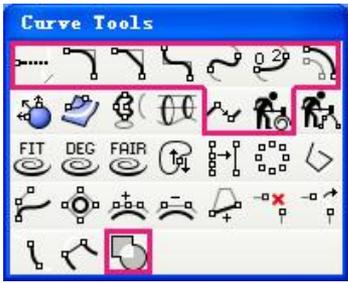


- 라이노는 2D인 라인(직선)과 커브(곡선)의 비중이 높다.
- 커브와 라인들을 마음대로 편집 할 수 있어야 효과적인 3D 오브젝트를 얻을 수 있다.



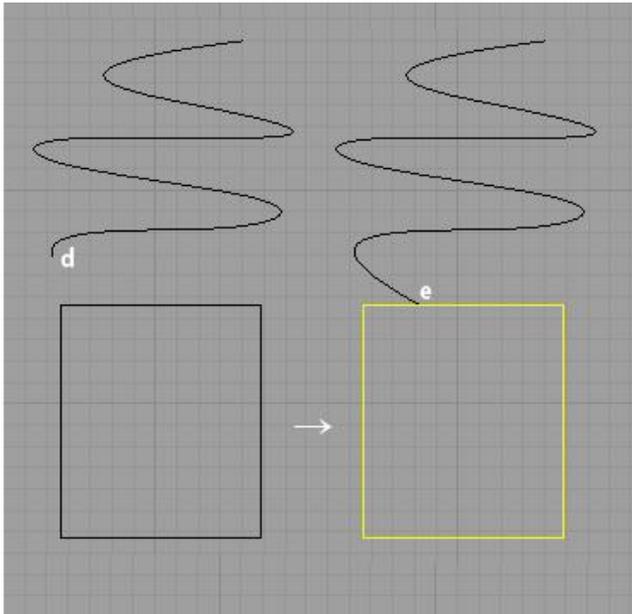
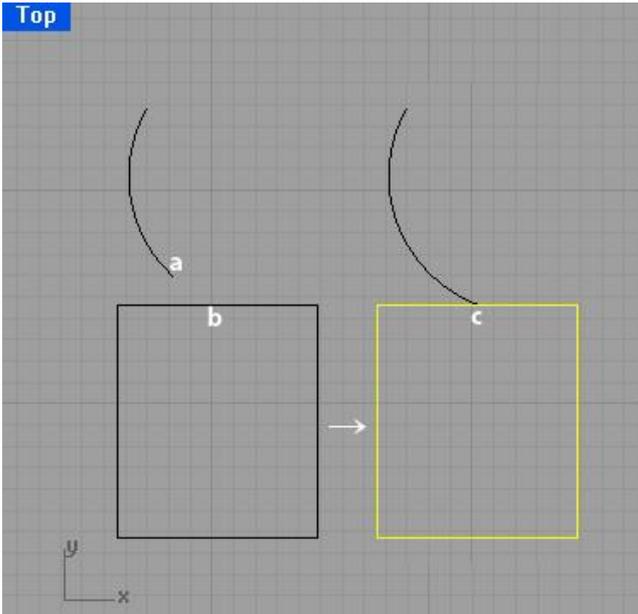
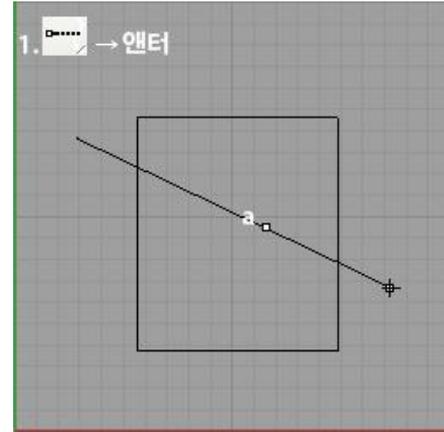
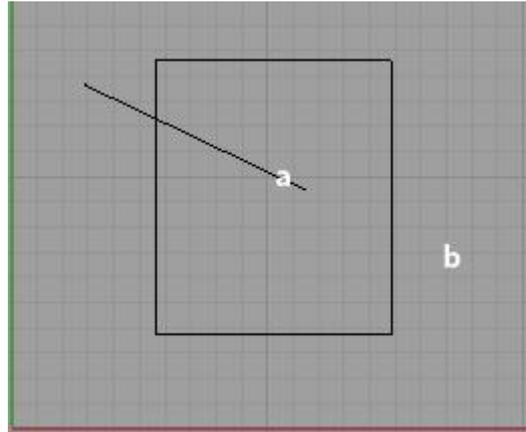


Extend Curve

익스텐드 커브 :

라인의 한쪽 끝을 연장시키는 명령

아크나 커브도 가능

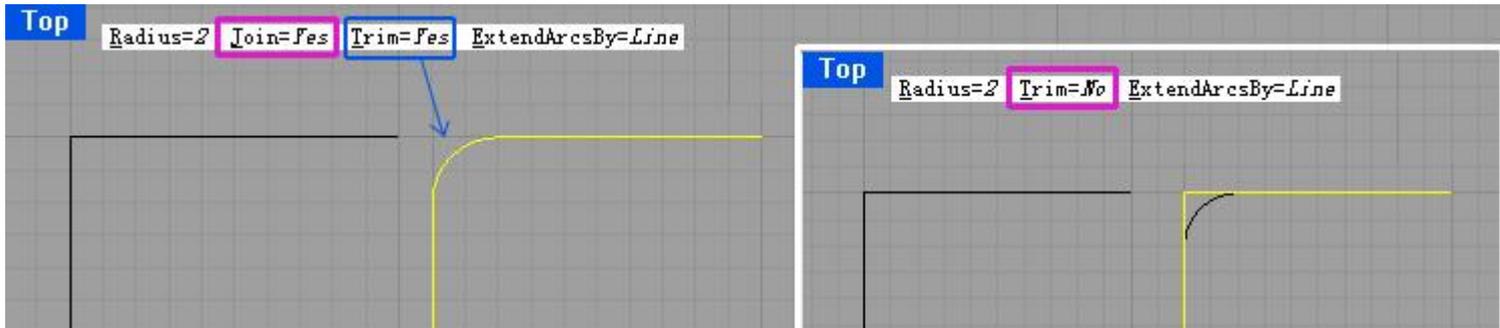
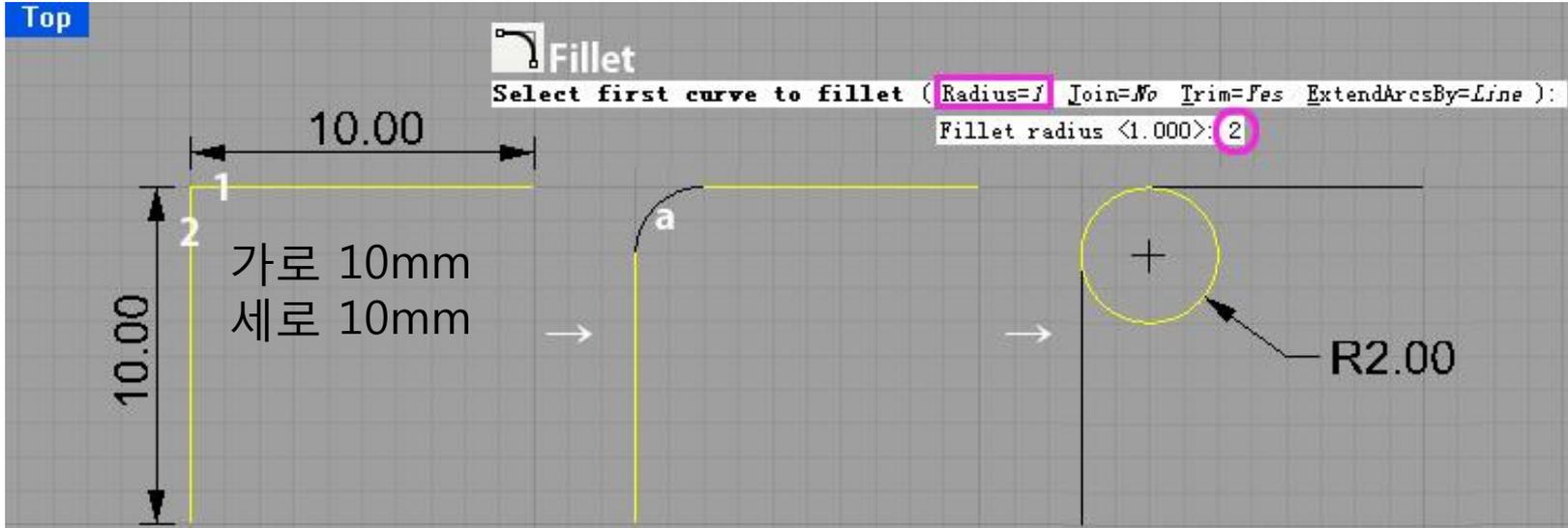




Fillet Curves

필렛 커브 :

두 직선이나 커브가 만나는 모서리를 둥글게 깎아 주는 명령.



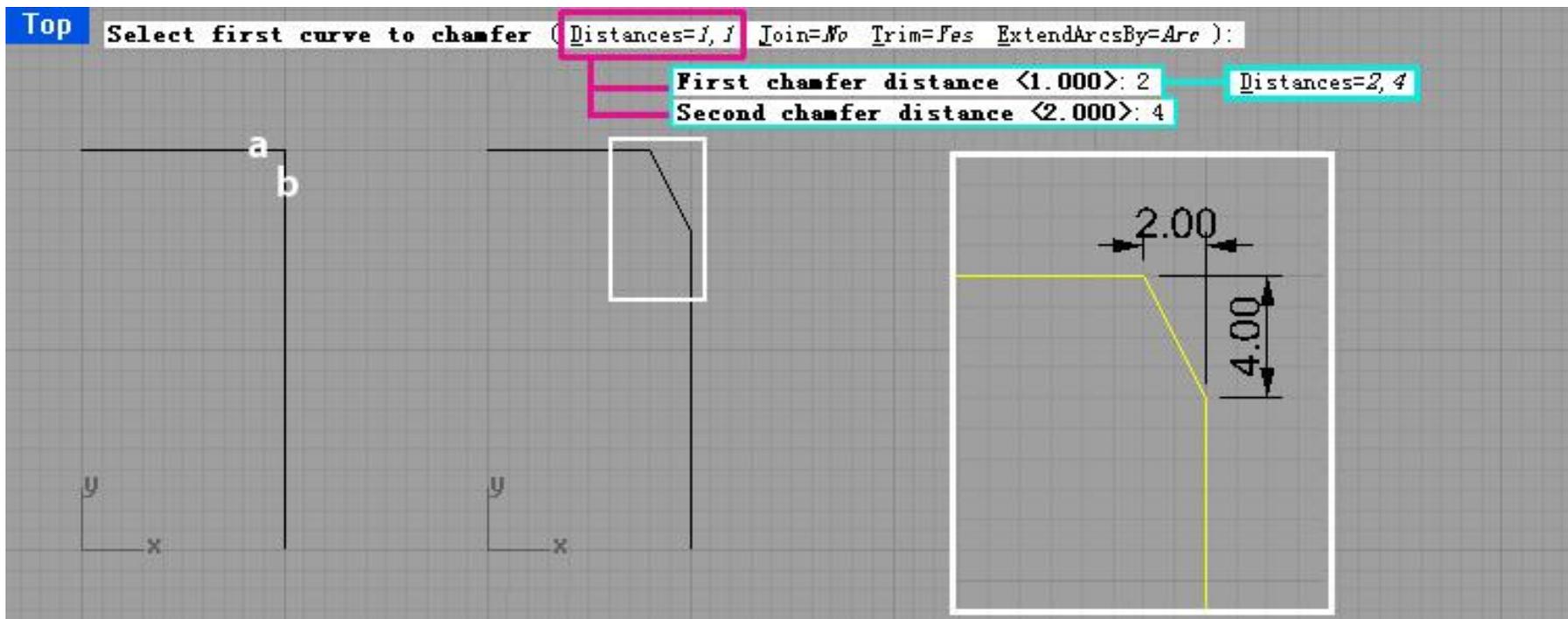
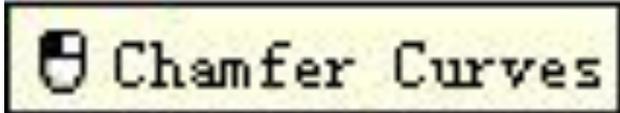
Join trim

모깎기 명령에는 3가지가 있다. 커브 모깎기, 서페이스 모깎기, 솔리드 모깎기이다. 각각의 명령 아이콘이 혼동되지 않도록 유의하며 작업한다. 여기서 말하는 모깎기는 커브 모깎기이다.



챔퍼 커브:

필렛(Fillet)이 둥글게 모서리를 깎아준다면,
챔퍼(Chamfer)는 모서리를 직선으로 깎음.

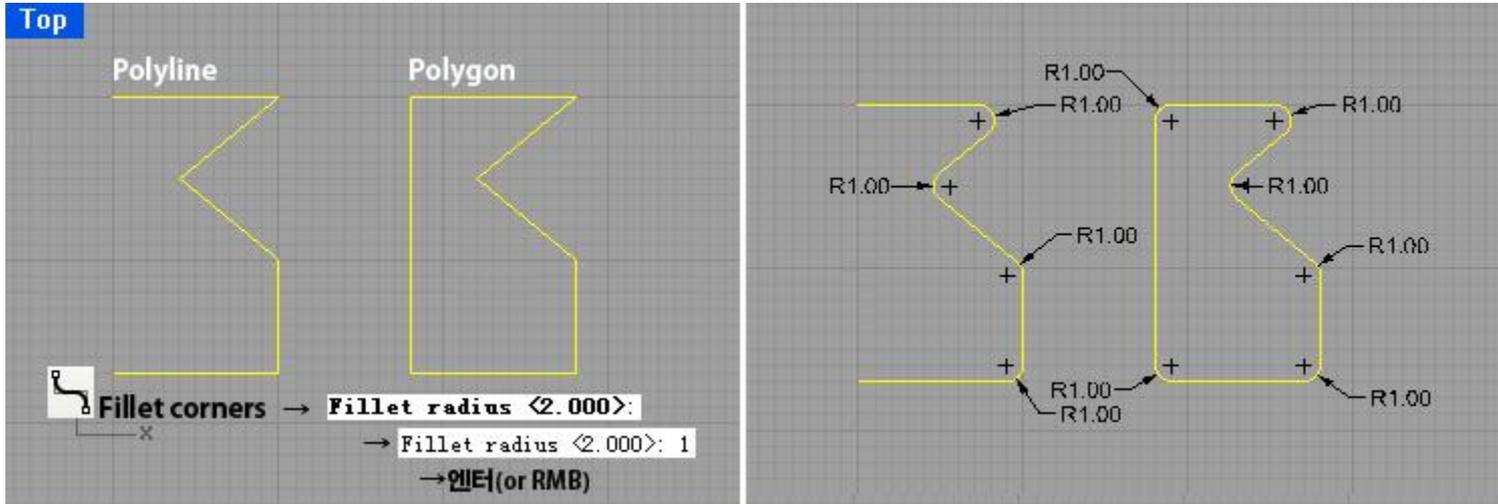


모서리를 직선으로 깎기 때문에 반지름 대신 거리를 사용한다



Fillet corners

코너들의 필렛을 한꺼번에 적용.



폴리라인과 폴리곤이 존재할때 각 모서리에 동일한 필렛값을 적용시키고 싶은 경우.

단 폴리라인(Polyline)과 폴리곤(Polygon)에만 적용



- Blend Curves
- Blend Perpendicular to two curves

블렌드 커브 :

두 커브 사이를 부드러운 탄젠트 값으로 서로 이어줌

Top Select first curve to blend - select near end (Perpendicular AtAngle Continuity=Tangency):

The image displays two side-by-side CAD software screenshots illustrating curve blending operations. The top status bar indicates the current mode is 'Top' and the selected operation is 'Blend Curves' with options for 'Perpendicular', 'AtAngle', and 'Continuity=Tangency'. The left screenshot, titled 'Blend Curves', shows two separate lines labeled 1 and 2, and a resulting smooth curve labeled 'a'. The right screenshot, titled 'Blend Perpendicular to two curves', shows two lines labeled '1.선택' and '2.선택' with 'OnCrv' markers, and a resulting smooth curve labeled 'b'. A vertical toolbar on the right side of the interface shows various curve and blend tools, with the current tool highlighted in pink.



Adjustable curve blend

블랜드 명령 중의 하나 숫자는 곡률을 뜻함.

Top

Fillet Radius=2

Blend Curves

G0 G1 G2 G3 G4

Adjustable curve blend

Analyze

Geometric Continuity of 2 Curves

Curves are G0.
Command: |

Fillet curves
Blend curves

Curves are G1.

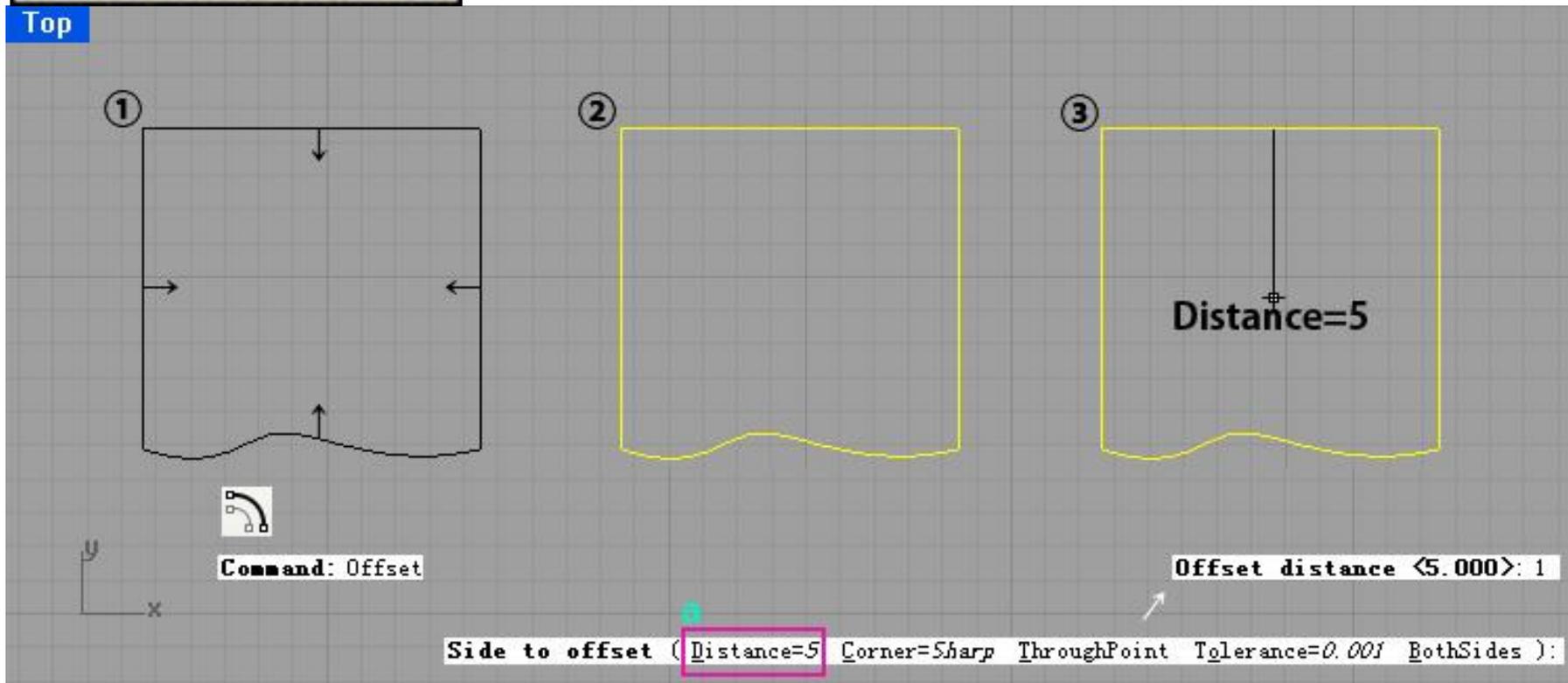


오프셋

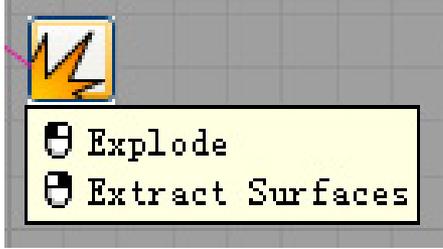
 Offset Curve

커브를 일정한 거리로 이동 복사시키는 명령

Top

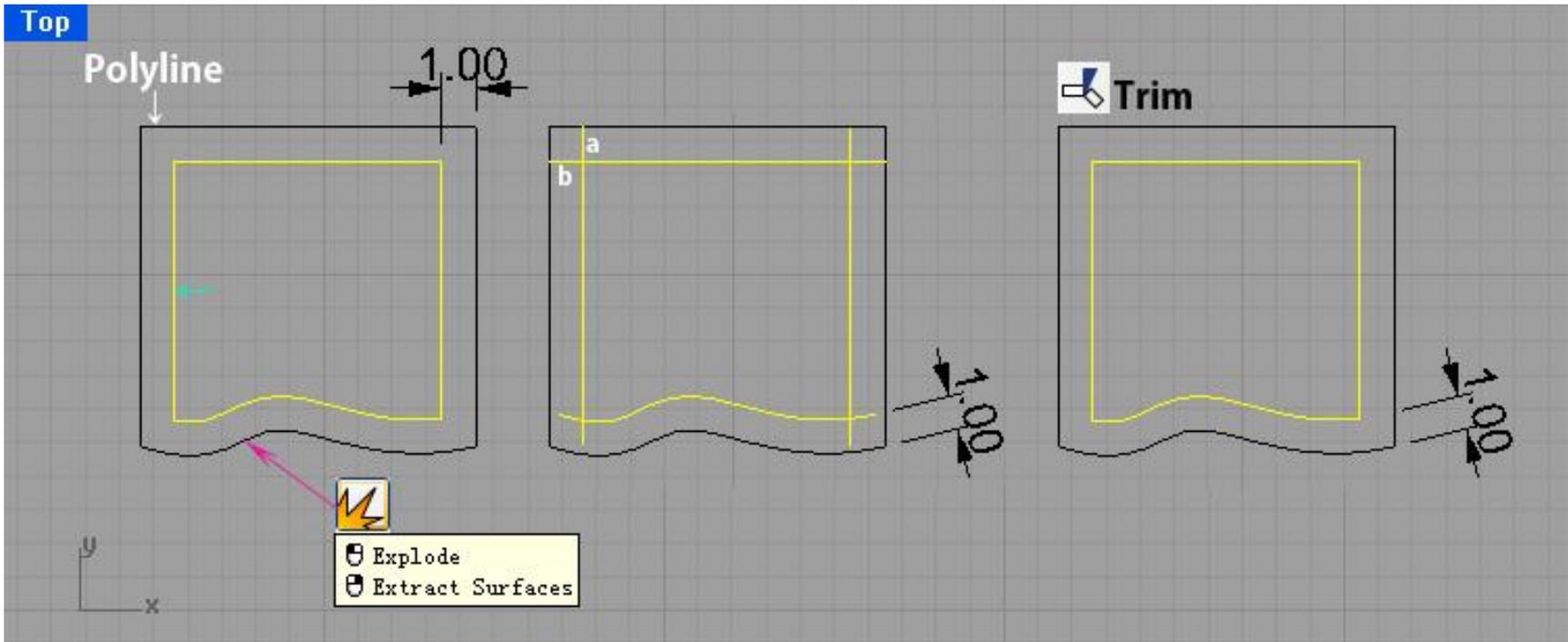


약간 작게 1mm 안쪽 으로 축소해서 똑같은 모양으로 만들고 싶다면
대상의 바깥쪽인지 안쪽인지를 정하기.



조인(Join)의 반대 개념인 **익스플로드 (Explode)**.

조인 되어 있는 오브젝트를 다시 해체시키는 명령

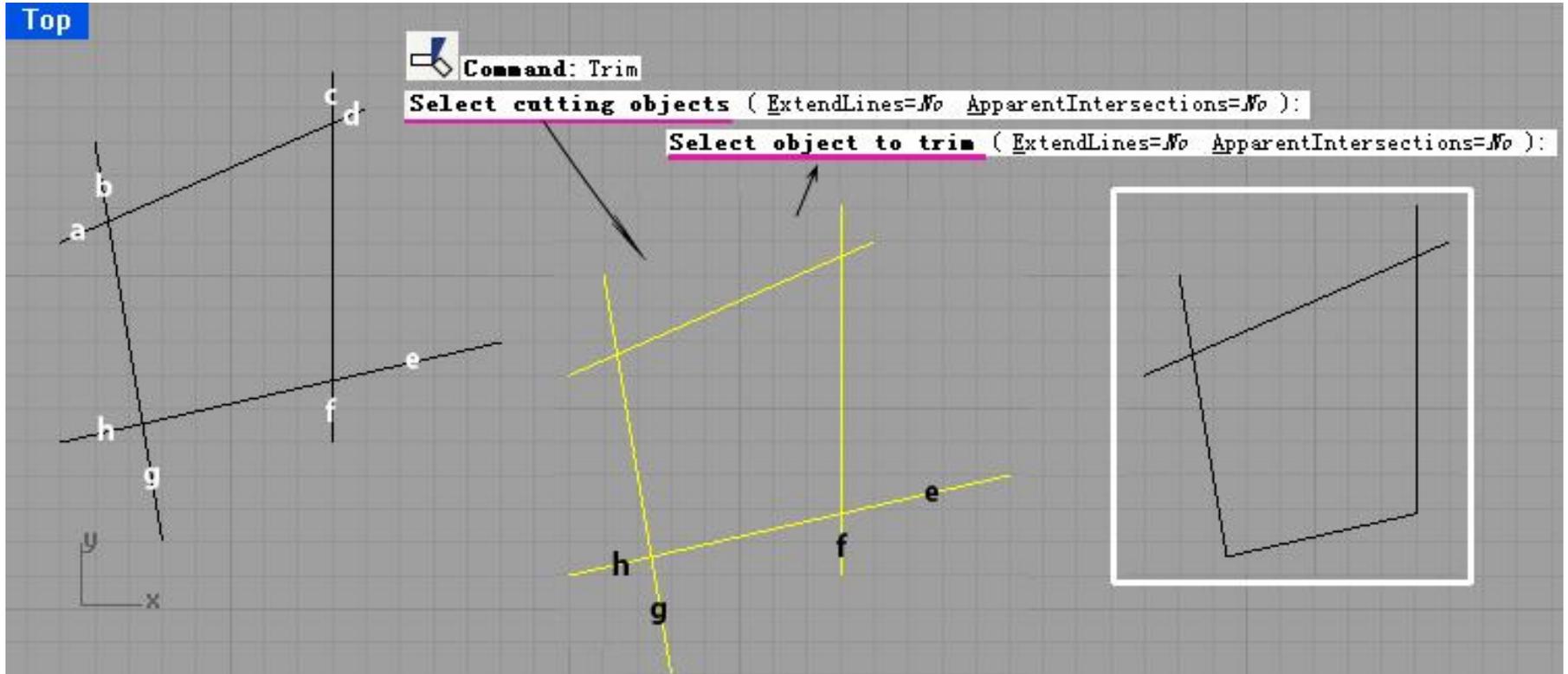




Trim
Untrim Surface

트림 (Trim)

지저분하게 튀어 나온 선들이 많이 존재할때 이런 선들을 정리해주는 명령 'Select cutting objects' (자를 오브젝트를 선택하라) 트림은 잘라냄과 동시에 삭제.

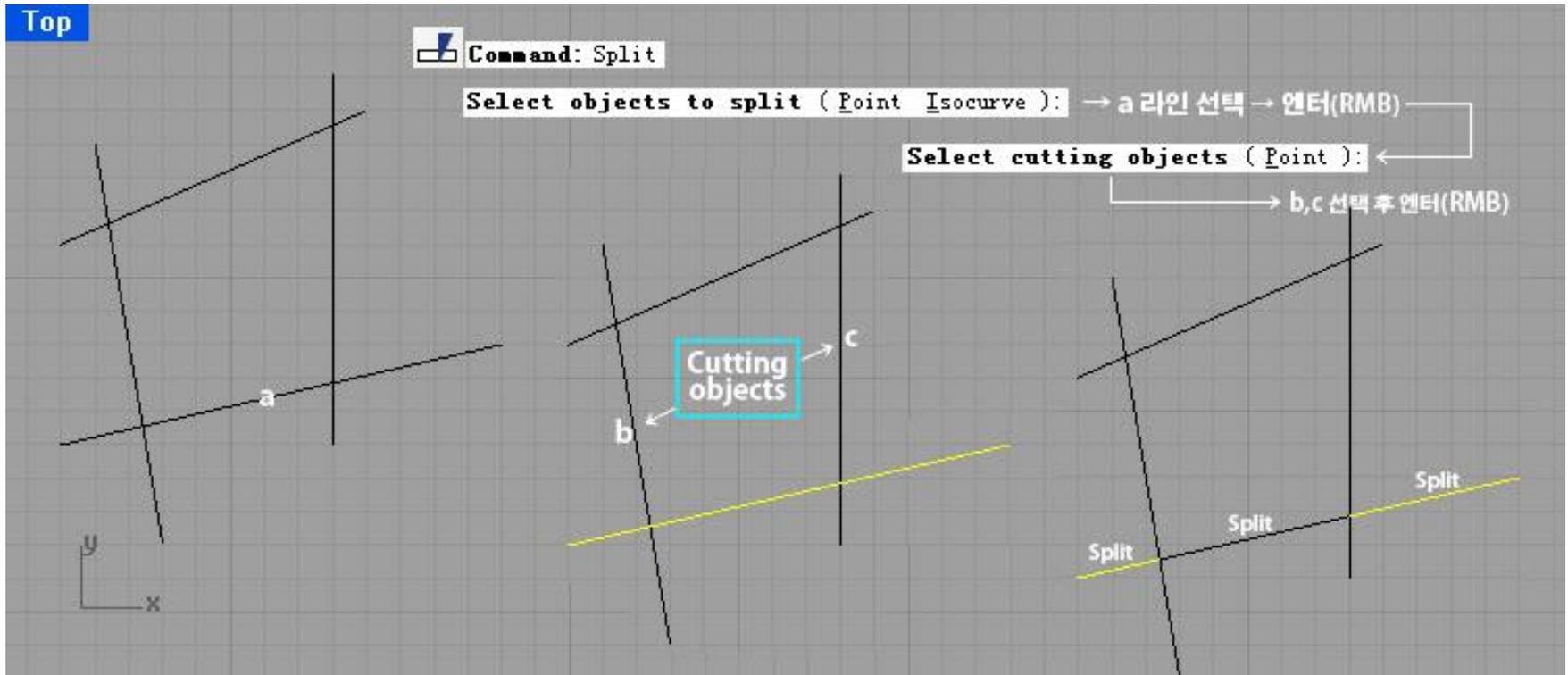




Split
Split Surface by Isocurve

오브젝트 분할

'Select objects to split' 즉 분할될 오브젝트를 먼저 선택
트림처럼 불필요한 부분을 지우고 싶다면 이제 직접 선택하고 Delete

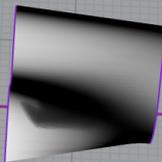




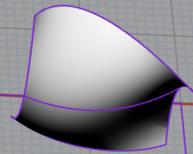
Plane



Surface: from points



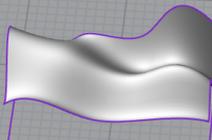
Loft



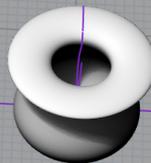
Curve Network



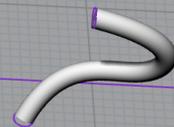
Patch



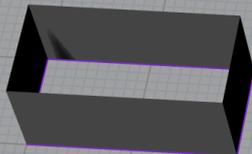
Surface: edge curves



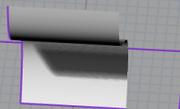
Revolve



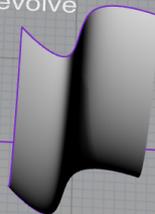
Pipe



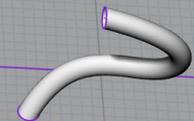
Extrude: Surface



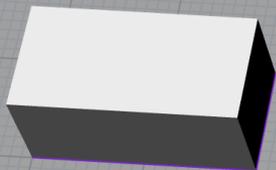
Extrude: Curve Along Curve



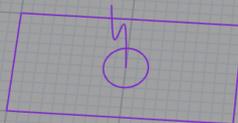
Sweep: 1 Rail



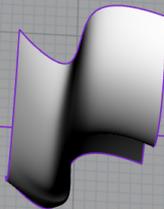
Sweep: 1 Rail



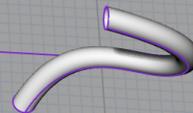
Extrude: Solid



Pipe



Sweep: 2 Rails

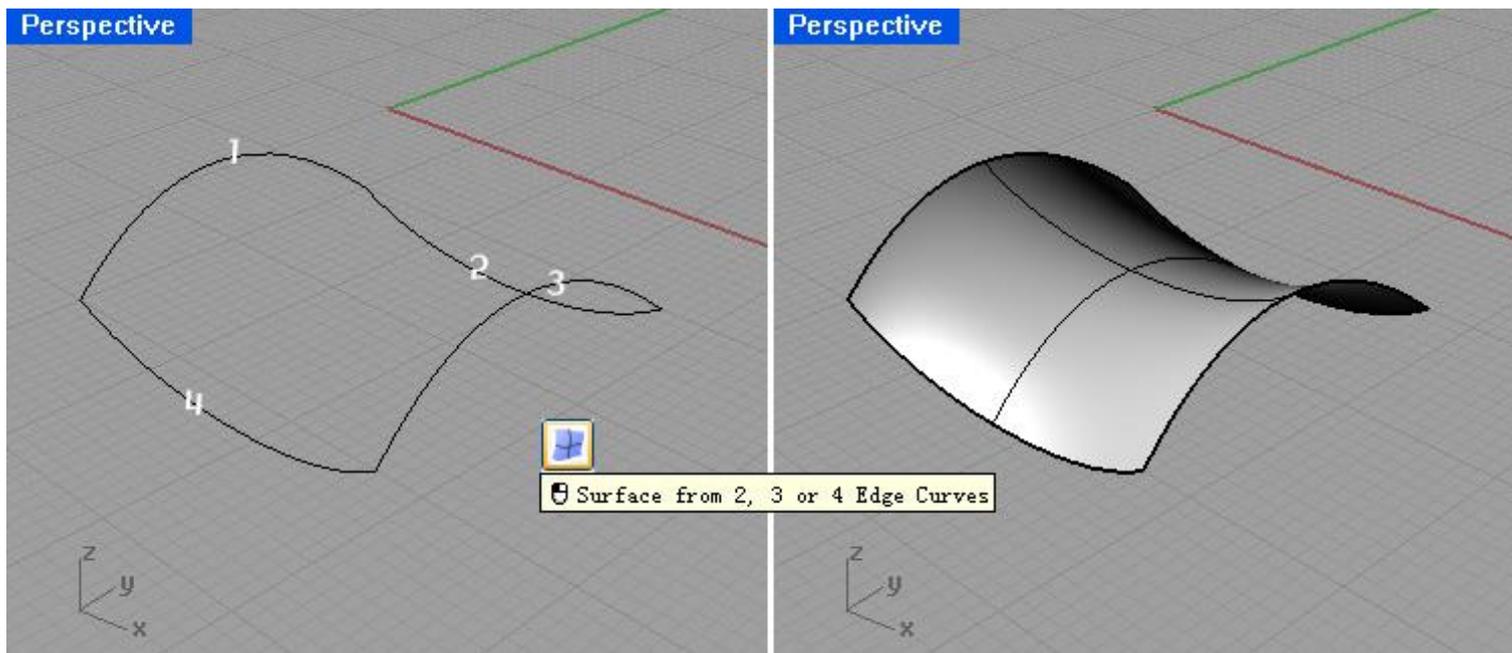


Sweep: 2 Rails

서페이스(Surface)의 생성

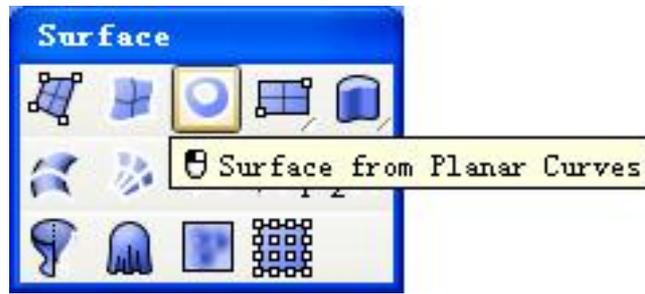
Surface from 2, 3 or 4 Edge Curves:

커브 라인을 두 개, 세 개 혹은 네 개까지 그려 놓고 그것을 서페이스의 엣지가 되도록 만드는 명령. 세 개 혹은 네 개의 포인트를 찍어서 면을 형성

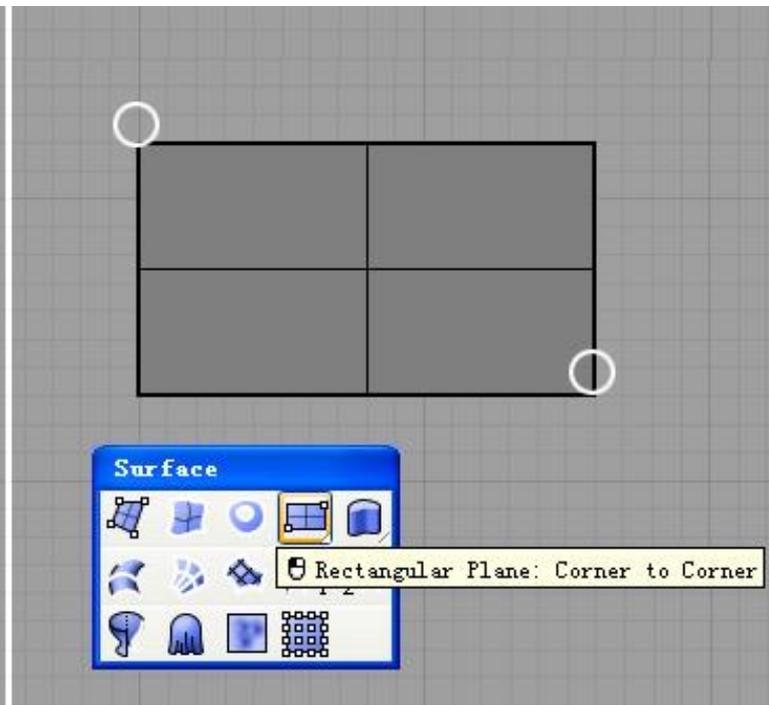
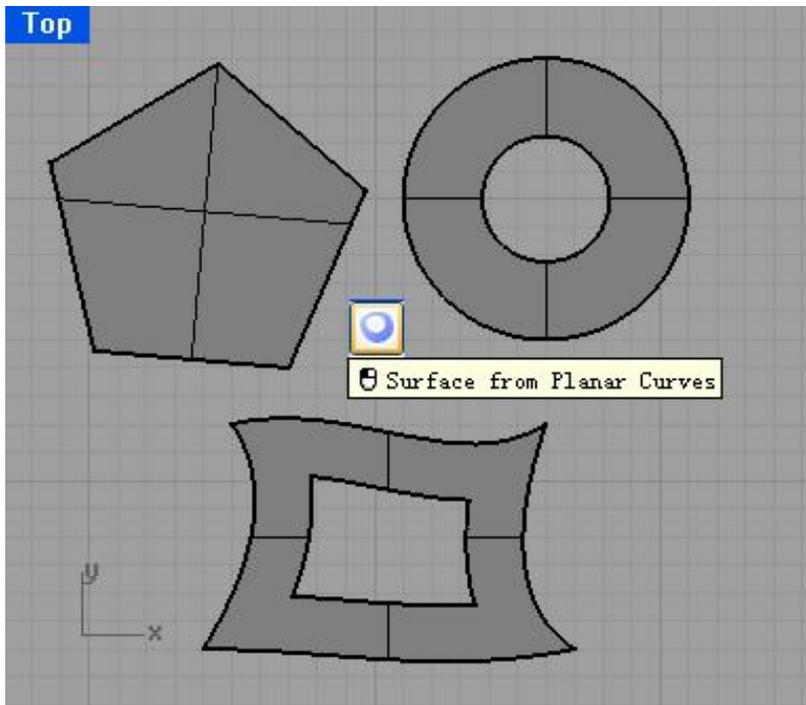


커브라인 뿐만 아니라 직선라인까지 심지어 기존에 있는 서페이스의 엣지들까지 모두 선택해서 면을 만들 수 있다.

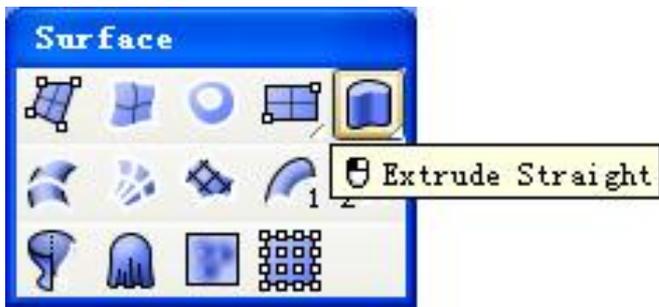
Surface from Planar Curves



플레이너 커브 톨은 평면의 커브들을 이용해서 면을 만드는 것으로 한마디로 평면을 만들어 내는 명령

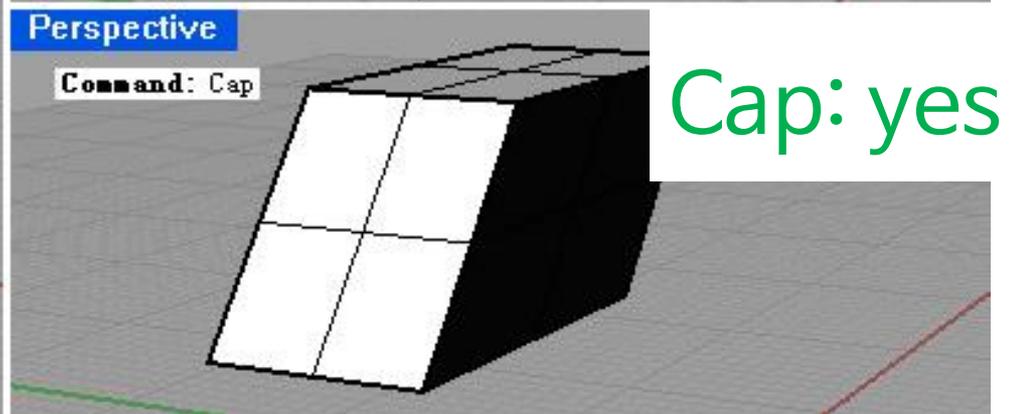
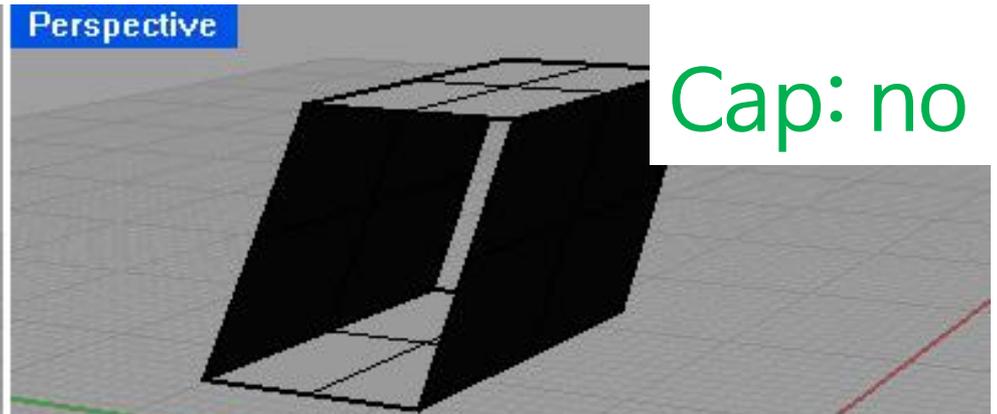
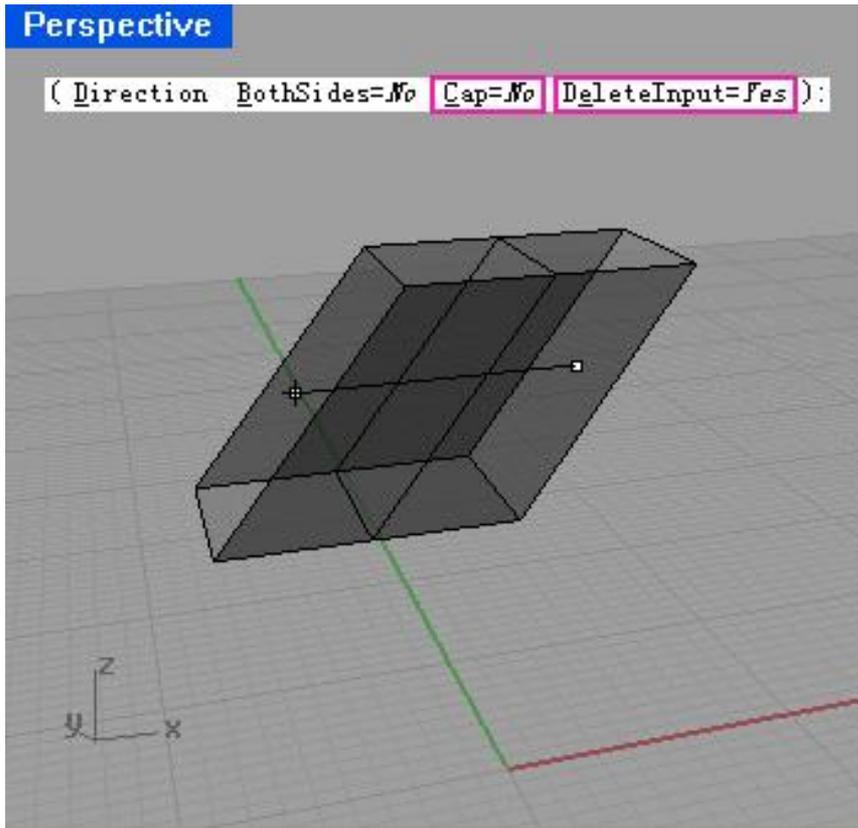


서클이든, 혹은 몇 각형이든 상관없이 모두 적용. 단! 반드시 평면.



익스트루드

2d를 3d로 만드는 대표적인 명령인



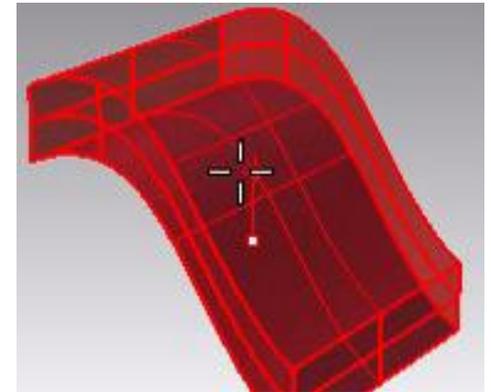
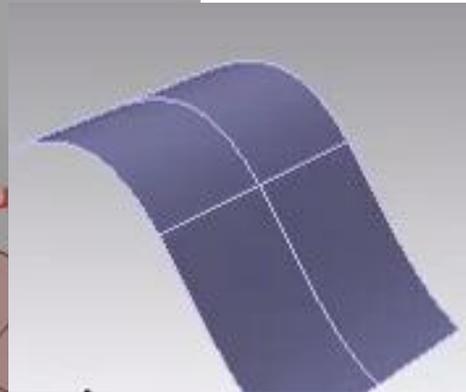
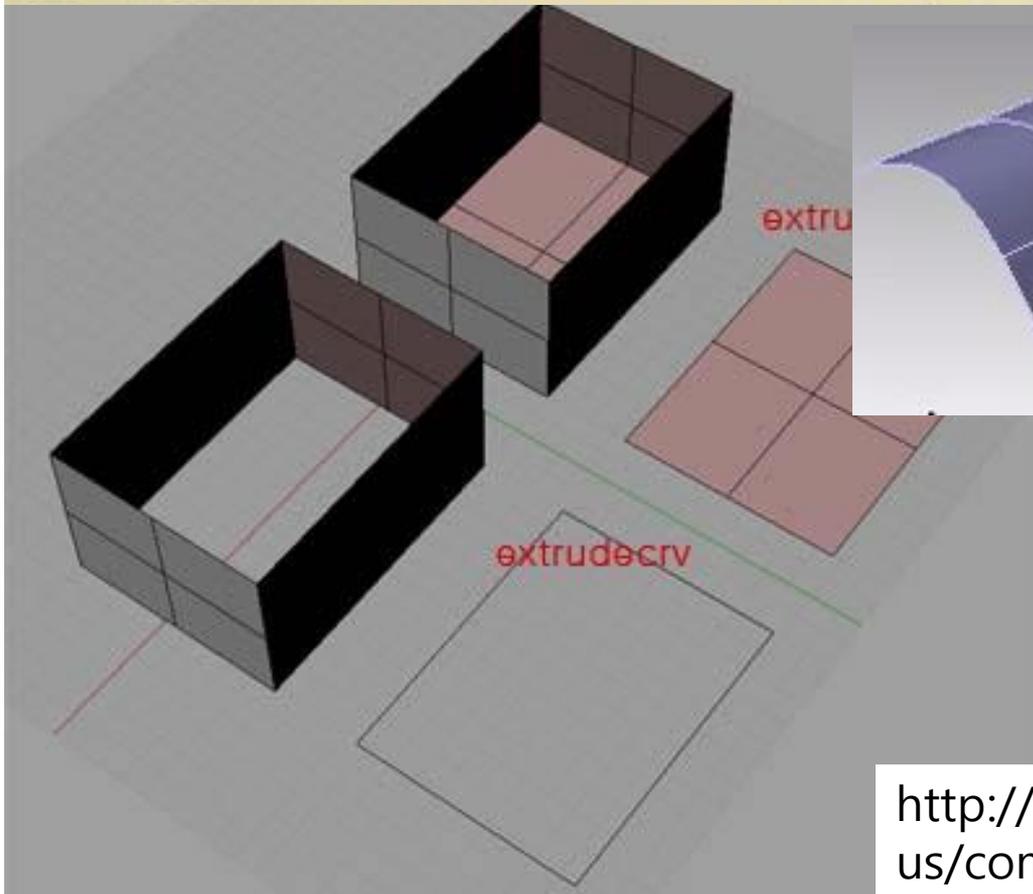
Extrudecrv:

curve를 선택하여 입체물을 만들 수 있는 명령

Extrudesrf:

surface를 선택하여 입체물을 만드는 명령

돌출 거리(방향)(D) 양쪽(B)=아니요, 끝막음(C)=예 모드(M)=직선 원래 개체 삭제(E)=아니요.) :

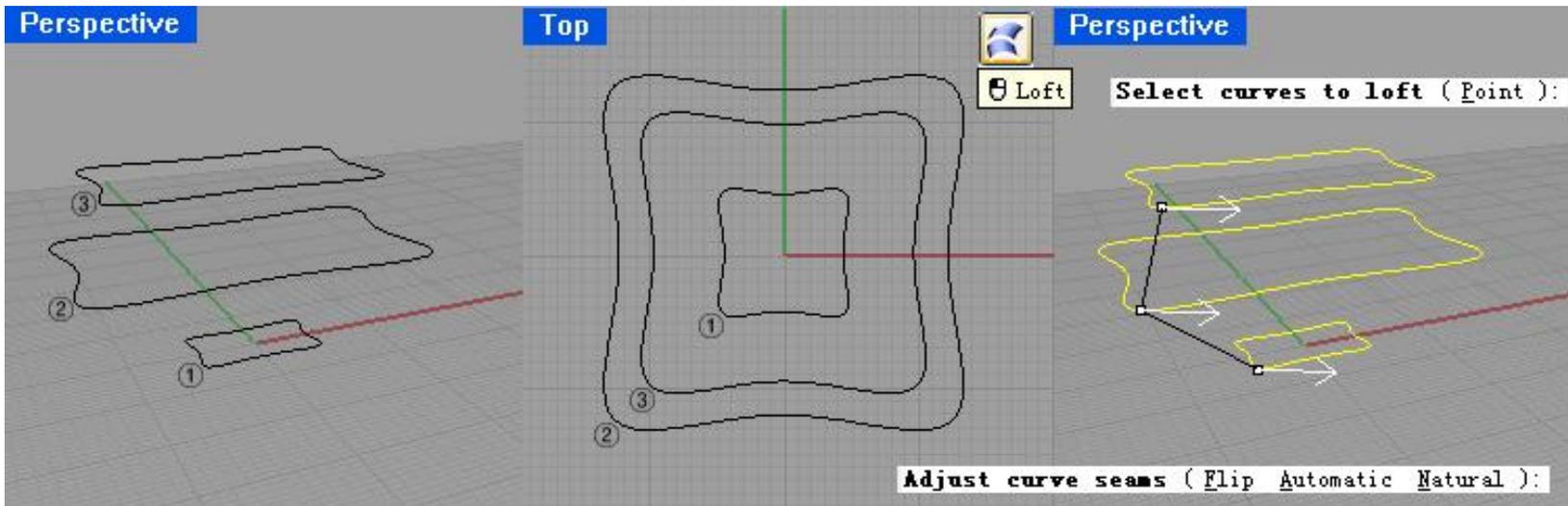


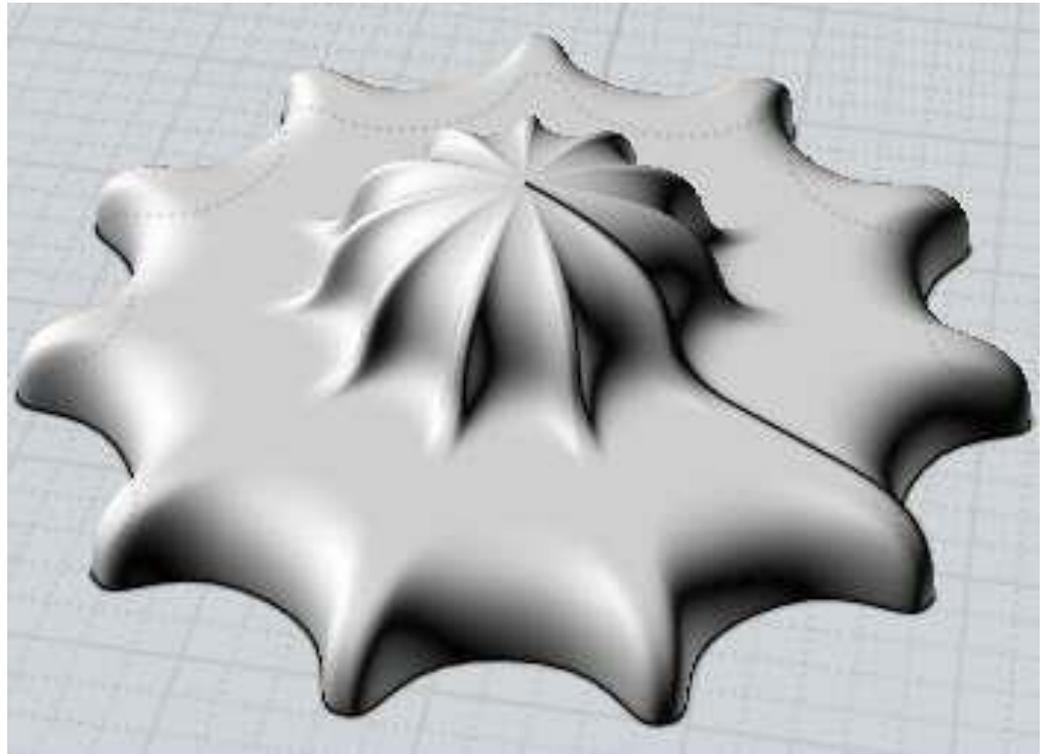
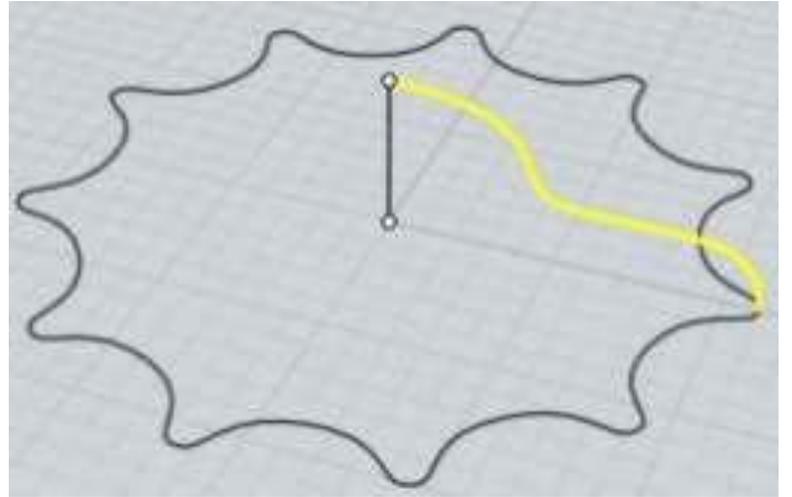
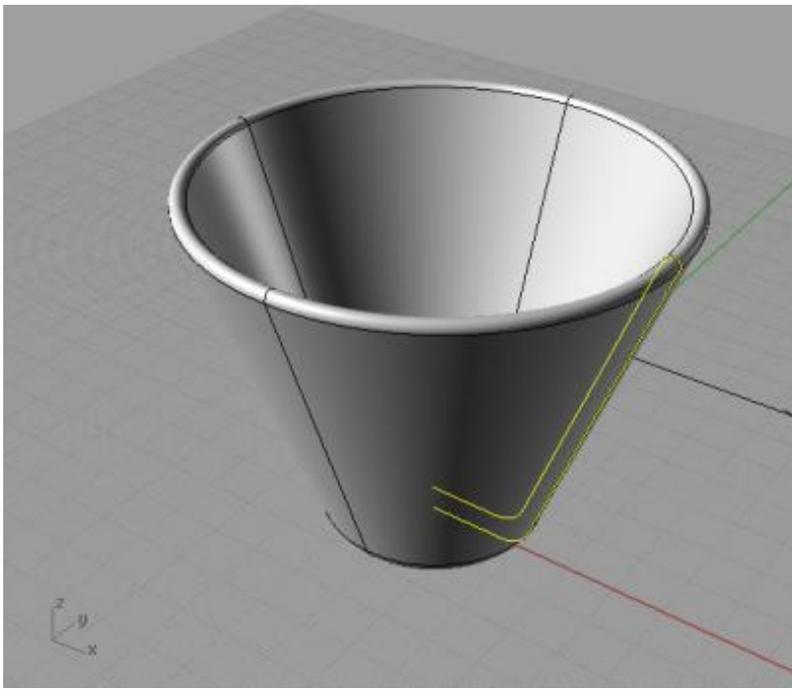
<http://docs.mcneel.com/rhino/5/help/en-us/commands/extrudesrf.htm>



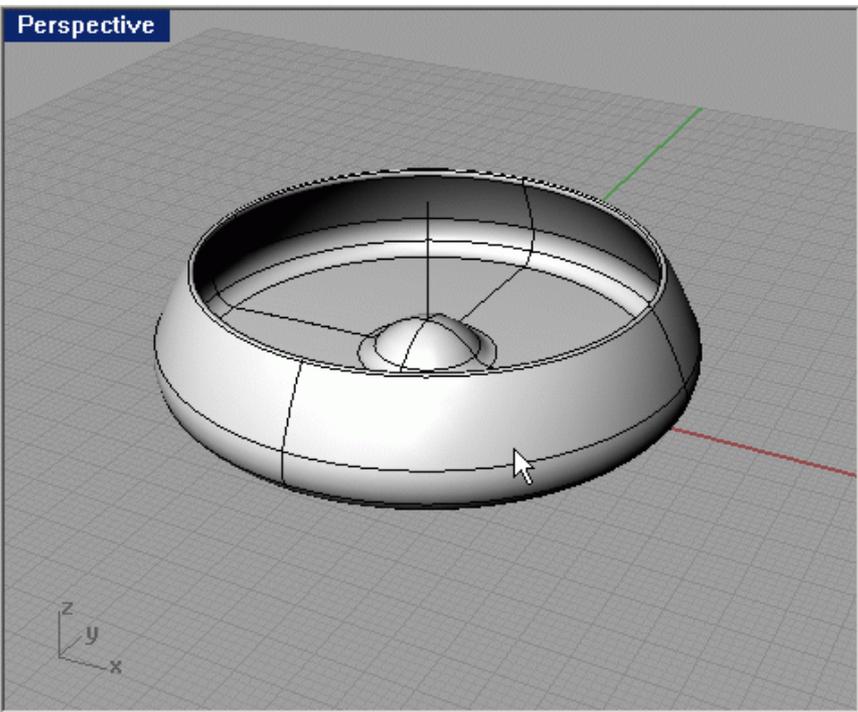
로프트 (Loft)

두 개 이상의 커브나 혹은 다각형(Polygon)들 사이에 면을 만드는 툴
사용방법이 간단하고 쉬워서 녀스 3D에서 아주 자주 사용되는 명령





Perspective



Perspective

