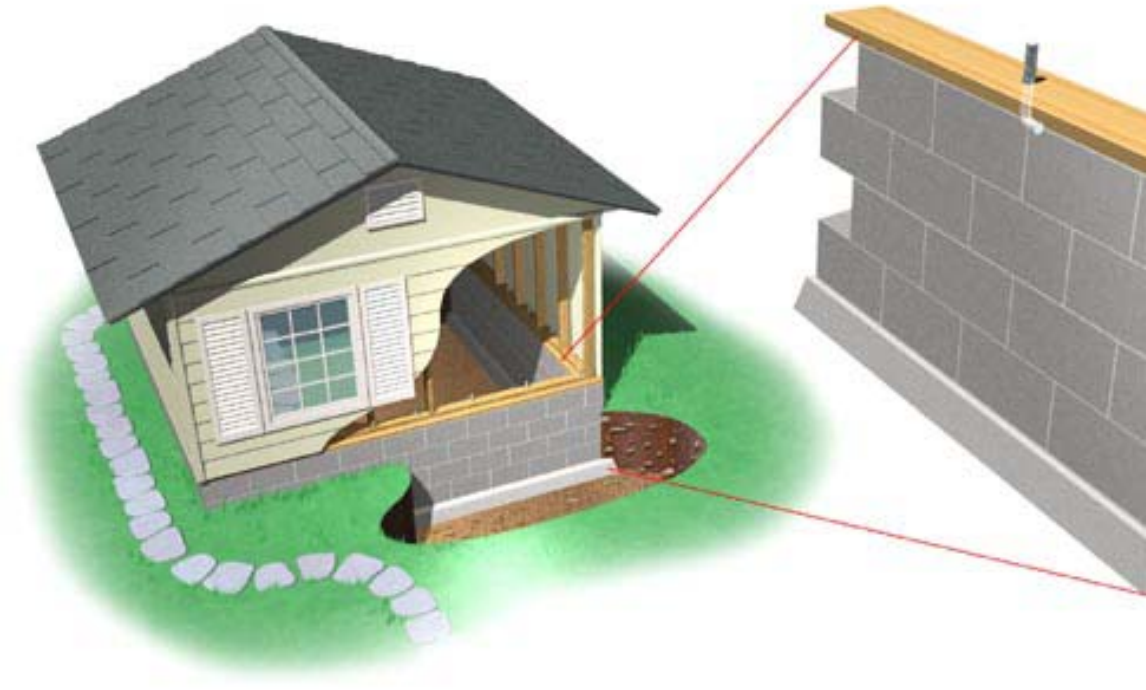


Building a Solid Foundation

Joe St. Cyr
CSWP
Farm Design Inc.



Building a Solid Foundation

Drawing up a game plan

Sketching for success

Feature functions

Feature performance



Drawing up a game plan

Take time to think your part through

(Develop a written feature map for your part/assembly)

Sketch step by step storyboard

(Use this as a tool to uncover modeling challenges)

Get input and review with others

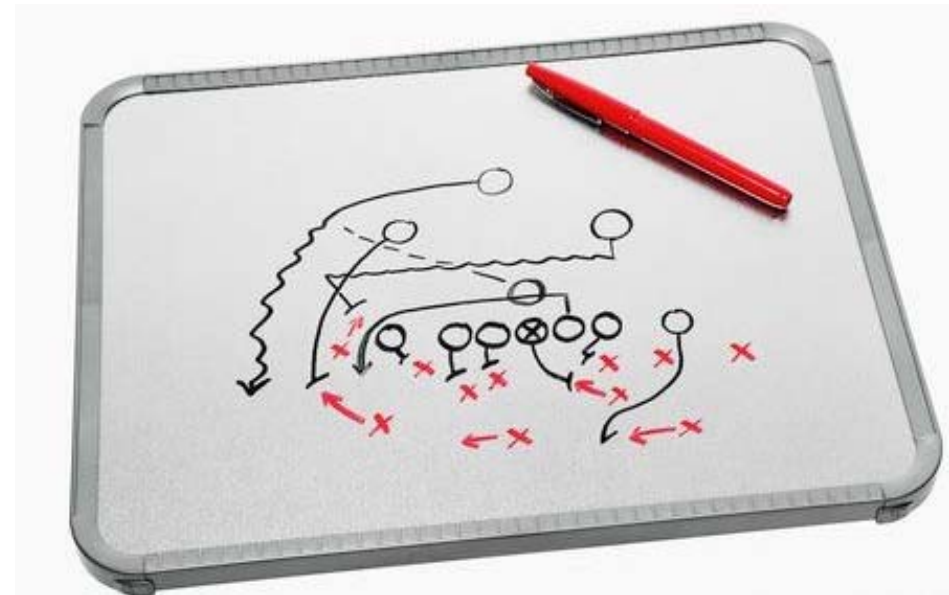
(Most problems can be solved by just asking for opinions)

If at first you don't succeed...

(Don't be afraid to start over)

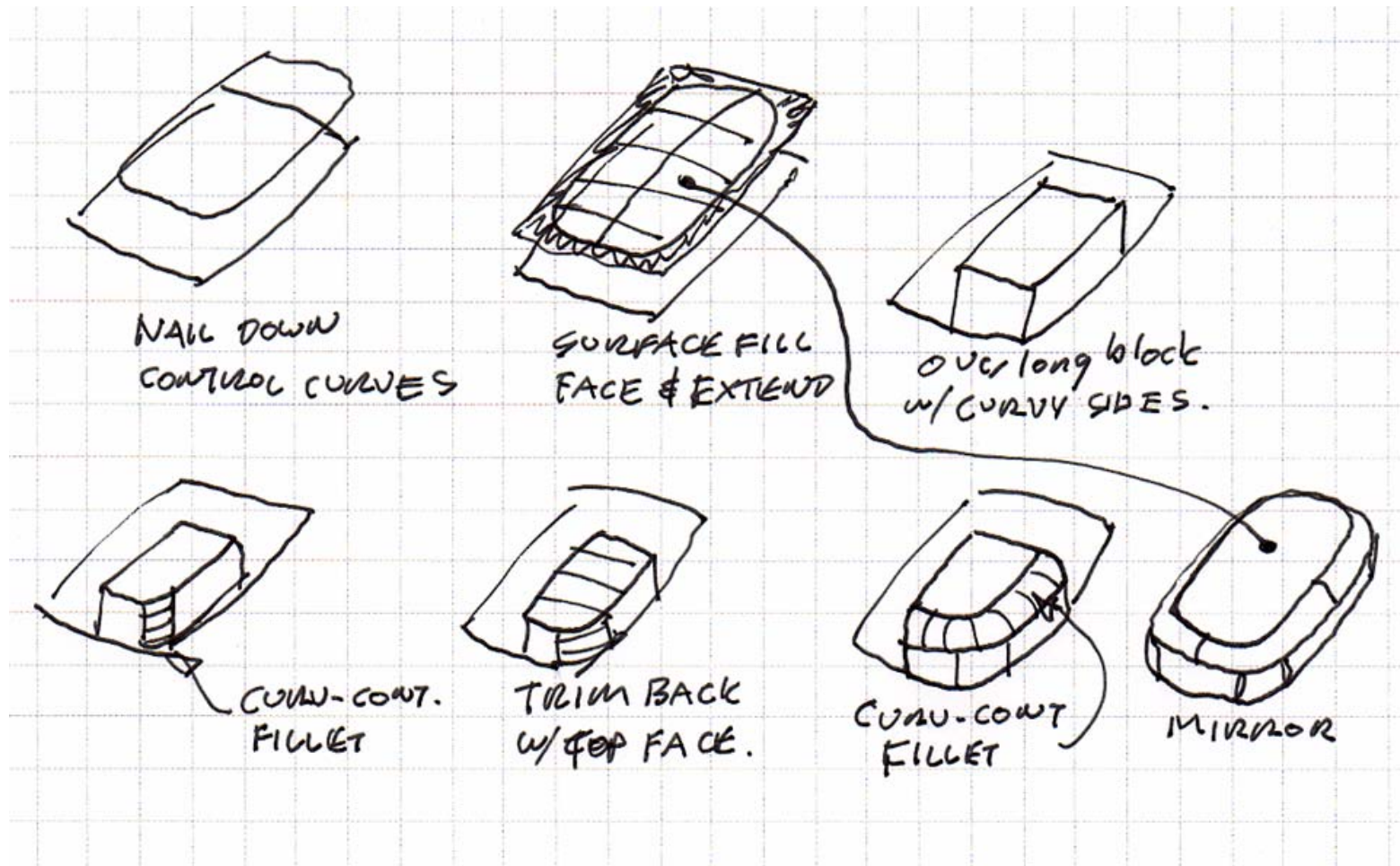
Don't get emotionally attached

(you learn as you model so don't be too headstrong)



Drawing up a game plan

Example step by step story board



Sketching for success

Develop layout sketches

(these sketches should live at the top of your feature tree and not be absorbed by other features)

Sketch relation survival

(See next slide)

Leave a breadcrumb trail

(Use construction lines in sketches to help convey design intent)

Never use FIX relations

(Use blocks if you need to lock down a non critical or imported sketch)

Manageable splines Use two point splines, with tangency controls, whenever possible. Remember to use proportional option to maintain shape of complex splines)



Sketching for success

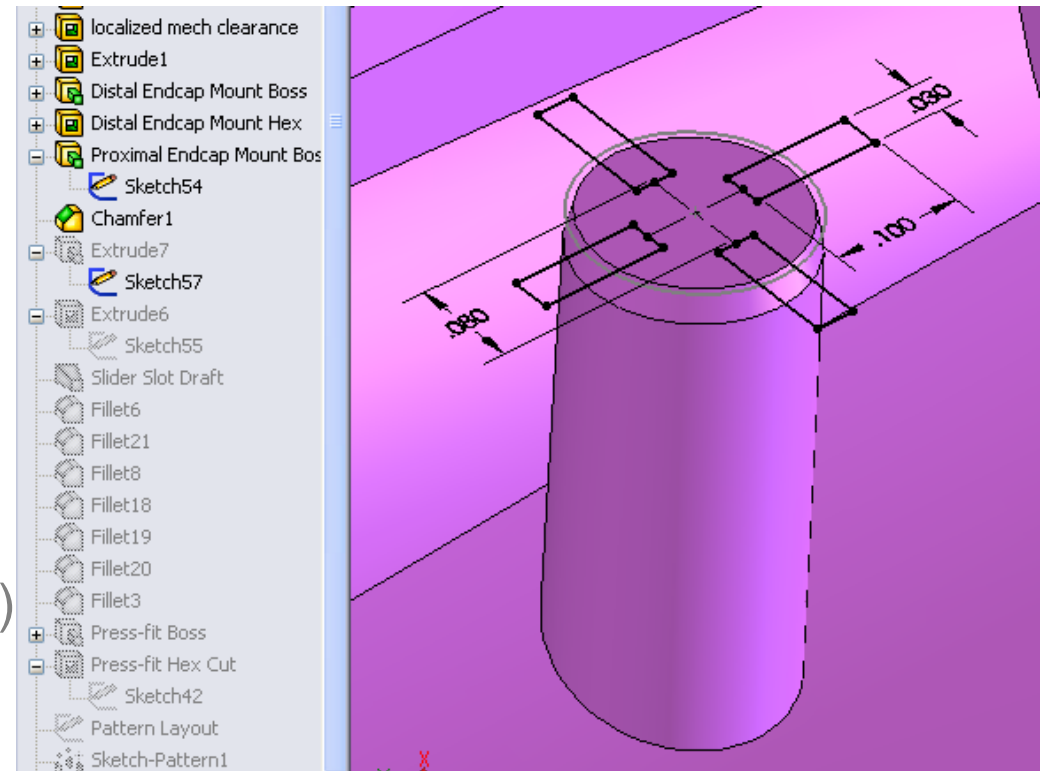
Sketch relation order for survival

Relations to:

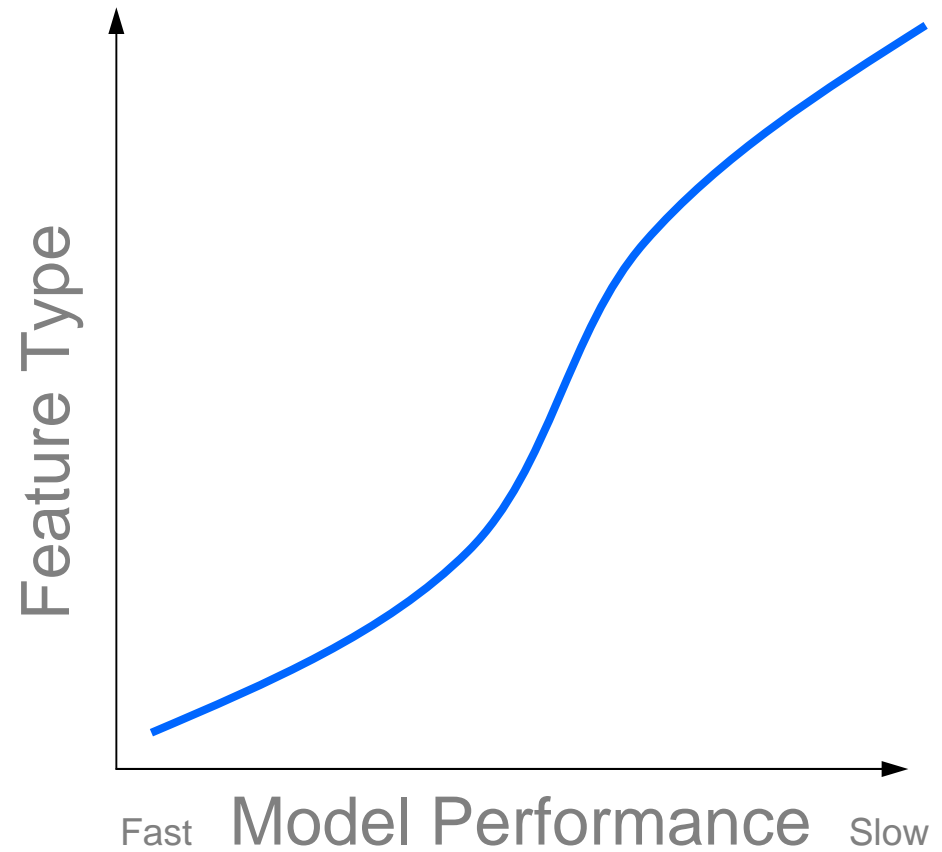
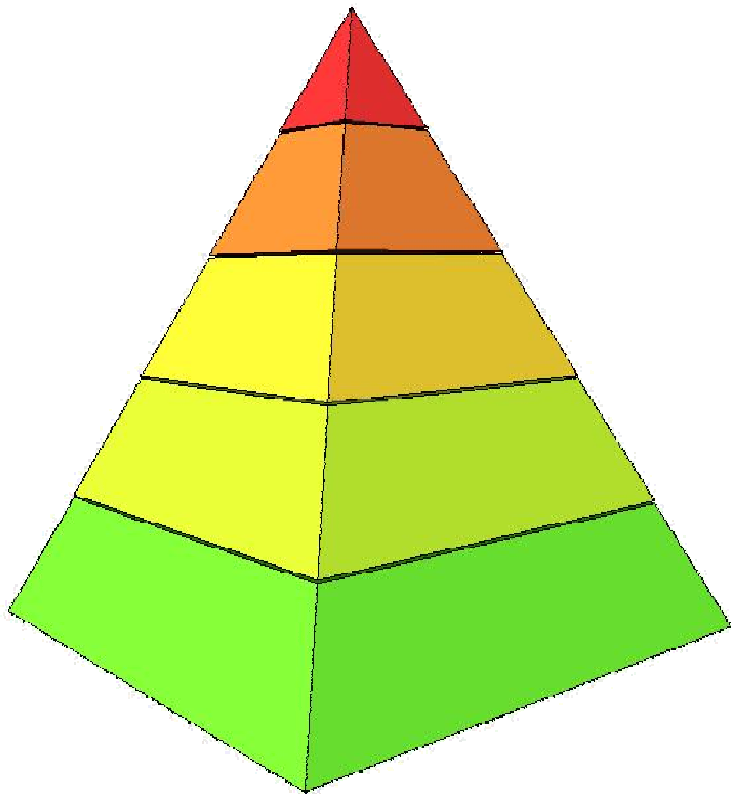
Best Origin

- Original Planes
- Active sketch entities
- Other sketch entities
- Reference geometry (curves, planes)
- Faces
- Edges

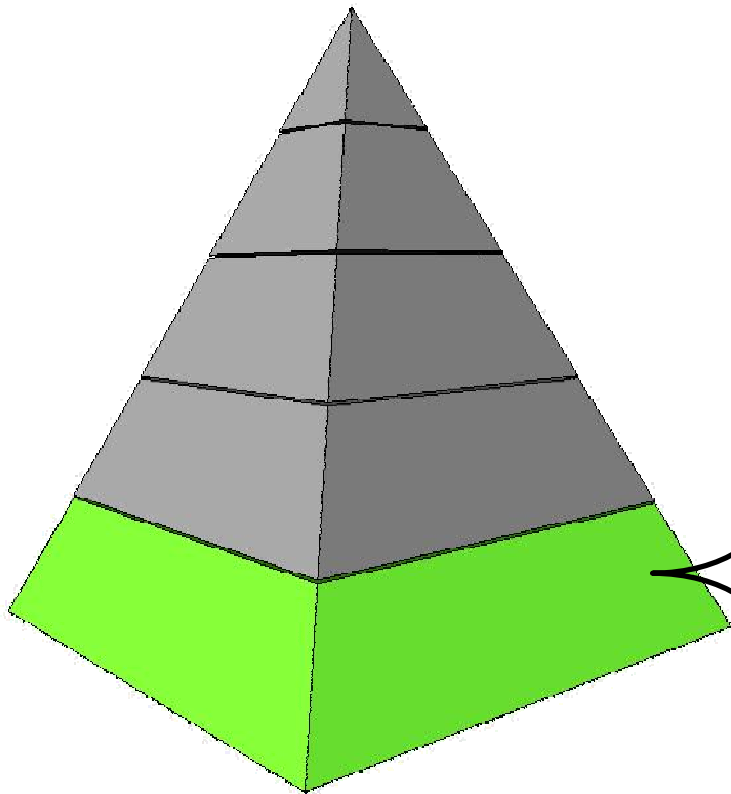
Worst Vertices



Feature performance

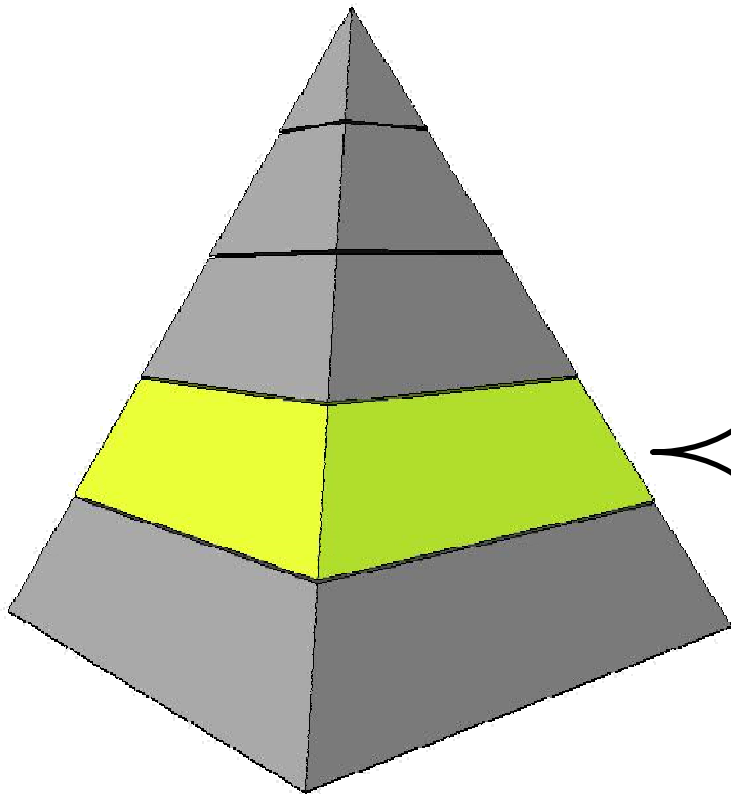


Feature performance



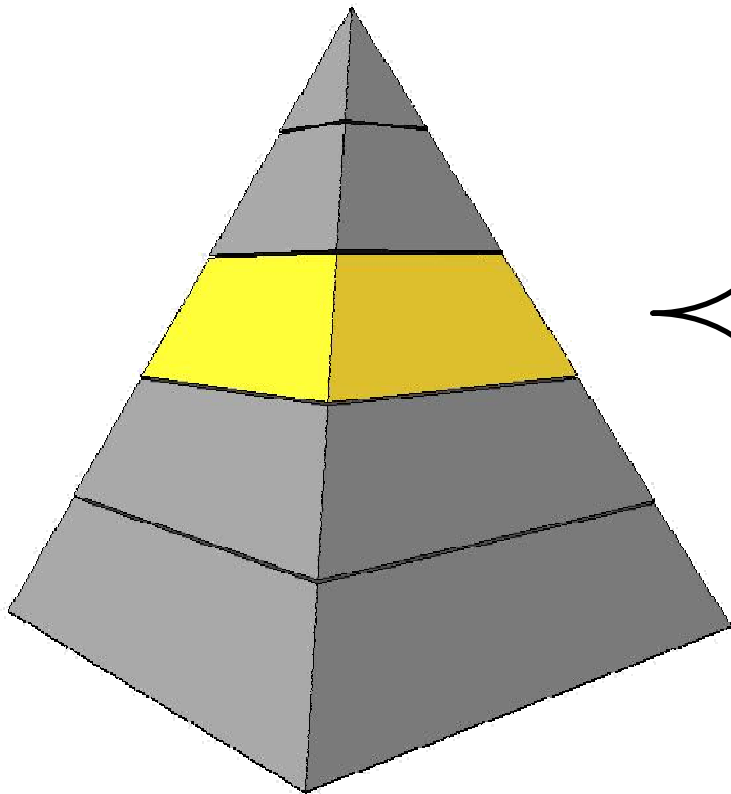
- Extruded cuts and bosses – ‘blind’, ‘through all’, ‘midplane’
- Revolves
- Constant radius fillets
- Chamfer
- Geometry patterns
- Face patterns
- Single direction patterns
- Mirror all
- Face draft

Feature performance



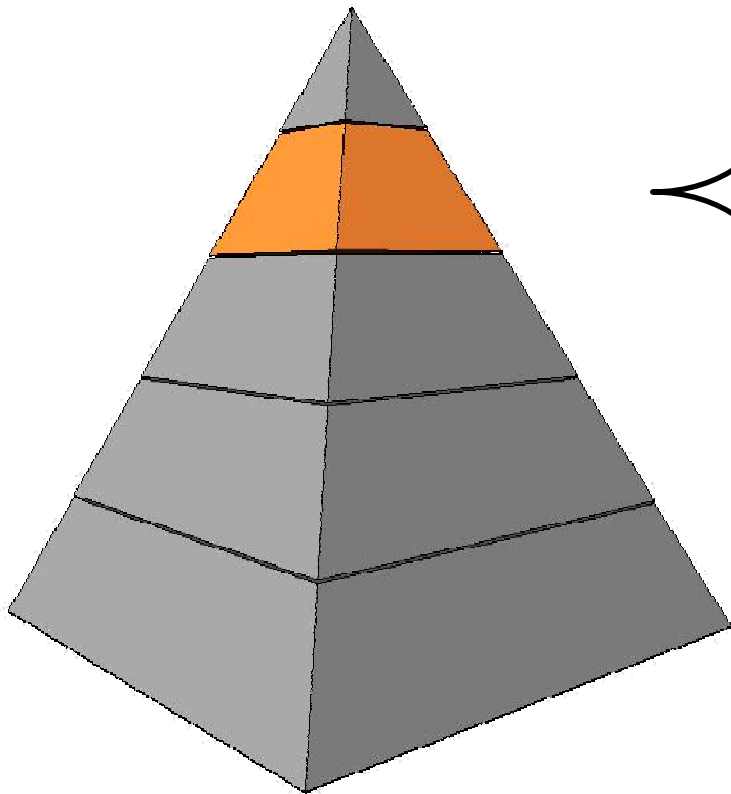
- Extruded cuts and bosses – ‘up to surface’
- Offset surfaces
- Planar surfaces
- Projected curves
- Sweep (simple)
- Parting line draft
- Hold line fillets
- Variable radius fillets
- Loft from two profiles
- Mirror feature
- Shell

Feature performance



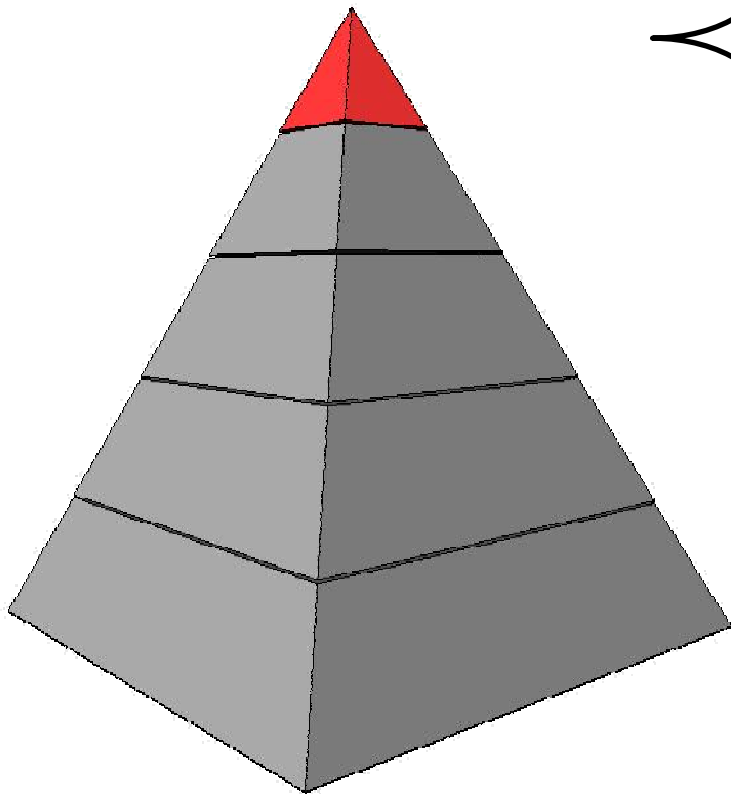
- Extruded cuts and bosses – ‘up to next’, ‘offset from surface’
- Sweep with guide curves
- Loft
- Centerline loft
- Cut with surface
- Trim surface
- Extend surface
- Create solid from knitted surface
- Derived sketch
- Sheet metal

Feature performance



- Loft with guide curve
- Two direction patterns
- Surface fill
- Base parts
- Mirror parts
- Configurations
- In context features
- Join
- 3-D sketches
- Radiate surface
- Split line
- Rib

Feature performance



- **Cut-thicken**
- **Fix in sketch**
- **Using faces, edges 'in context'**
- **Imported surfaces**
- **Helix**
- **Dome**
- **Shape feature**
- **Curve through reference points**
- **Scale**



THANK YOU.

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