Visualization Techniques

Multiview Drawings
Visualization Techniques

- Projection studies
- Adjacent areas
- Similar shapes
- Vertex labeling
- Surface labeling
- Missing line problems
- Missing views
- Analysis by solids
Projection Studies
Adjacent Areas

- *Adjacent areas* are surfaces that reside next to each other.
- Boundary between adjacent areas represents a change in planes.
Surface Labeling
Similar Shapes

- Surfaces maintain basic shape from one view to the next, except when viewed on edge.
- Useful for objects with inclined and oblique surfaces.
Similar Shapes - Examples
Vertex Labeling
Missing Line Problems
Missing Line Problem - Examples

A. Given

B. Projectors

C. Solution
Missing Views
Missing View Problem - Examples

A. Given    B. Construction    C. Solution

A. Given    B. Construction    C. Solution
Analysis by Features

A. Extrude  B. Boss (raised cylinder)  C. Countersink hole  D. Chamfer (2)  E. Fillet (2)  F. Rib
Analysis by Features 2

A. Extrude
B. Extrude (join)
C. Extrude (cut)
D. Boss
E. Hole
F. Mirror

G. Hole (4)
H. Extrude (cut)
I. Boss
J. Countersink hole
F. Multiple fillets
Visualization Testing

- Purdue Spatial Visualization Test: Rotations (PSVT:R)
- Mental Cutting Test (MCT)
- Mental Rotation Test (MRT)
Purdue Spatial Visualization Test: Rotations (PSVT:R)
Visualization Techniques

Basta cosi!