Why:
Both size and shape information is necessary to manufacture a part from a drawing. The miter system is an excellent tool used to construct missing orthographic views from existing views. Basic dimensioning skills are absolutely necessary for a design engineer.

Learning Objectives:
- Use the miter system to construct a missing view given two adjacent views.

Performance Criteria:
- Demonstrated use of the miter system to construct a view.
- New view accurate in size and placement.
- Proper use of object, hidden and construction lines.
- Use proper dimension spacing.
- Dimensions placed appropriately between views.
- Appropriate number of dimensions.
- Neatly prepared assignment

Resources besides Class Notes, Other Students, Instructor, Textbook, and Past Hands-Ons:
- Tutors
- SI (Supplemental Instructor)
- Visualization study session.

Plan:
1. Use the miter system to construct the missing view on the attached drawings. Be sure to use *light* lines for construction lines. Object lines are dark and thick. Hidden lines are dark and thin. (Refer to Alphabet of Lines Handout or GMC textbook)
2. Completely dimension the parts using 2-place decimal, unidirectional chain dimensions. The grid is 1/4" x 1/4" and the part is drawn full size. General tolerance will be ±.01.
   a. You need to provide the size and location of all features (protrusions and cuts) on the part.
      i. Design Intent 7A: Material is important, except for notch. Notch is important and is located from the left, top and back surfaces.
      ii. Design Intent 7B: Size of cut away portions are important.
   b. Remember to leave a minimum of ½" clear space between dimensions and/or views.
3. At the beginning of the next class, trade your sketches with someone you don't know and make clay models from his/her sketches. You may ONLY use the dimensions given. You may NOT take measurements or alter the other person's sketched views.
4. Mark up the other student's sketches where you had problems, i.e., missing dimensions, over dimensioned, third view sketched incorrectly, etc.
5. When finished, hand sketches back to the other student and discuss problem areas.

Critical Thinking Questions:
1. What assumptions did you make on the attached drawings for which views were given? Why?
2. Is there another set of views from which, if given, would have allowed the construction of the third? If so, list all sets of views that would have been acceptable.
3. If you were given the bottom and left views of sketch 3A, would you be able to construct all the other views? Why?