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Drawing

#### STUDY QUESTIONS FOR STEP 4

**1. List three (3) uses for freehand sketches:**

Sketching is a freehand drawing process that allows detailers, designers, engineers, architects, technicians, and trades persons to record their ideas quickly on paper without the use of tools. Once they have recorded their ideas, they can revise and refine their sketches for presentation to their supervisors or clients. Sketching is also helpful in preliminary planning of a drawing or layout before using tools.

**2. What does a "multiview sketch" show you about an object?**

A multiview two-dimensional (2D) sketch shows the actual shape of an object from different directions that are 90° apart. A typical multiview sketch will include views from the top, front and right side. The back, bottom and left side views are optional depending on the complexity of the objects shape.

**3. List the three (3) principle views that are shown on a multiview sketch:**

The three principle views that are shown on a multiview sketch are the: Top, Front, and Right Side.

**4. List in your own words the steps to follow in the making of a multiview sketch:**

The steps to follow in the making of a multiview sketch are: Analyze the Object, Layout the Views, sketch construction lines for the outline of each view, make lines that locate changes in the shape of an object (curves, holes, corners), add details, darken visible lines, darken hidden lines (such as interior edges or hollow portions), and add center lines (in the centers of holes or arcs).

**5. What does a "pictorial sketch" show you about an object?**

A pictorial three dimensional (3D) sketch shows the overall shape of an object from one direction.

**6. List the three (3) principle types of pictorial sketches:**

The three principle types of pictorial sketches are: isometric, oblique, and perspective.

**7. Why is the "isometric pictorial sketch" the most commonly used type of pictorial view?**

The isometric is the most common because it is the easiest pictorial sketch to create as actual measurements are used and the shape of arcs and circles is consistent on all surfaces.

**8. What overall shape should an object have to utilize an "oblique view"?**

The cabinet oblique sketch is best used for furniture or cylindrical shaped objects as a

normal front view is used

**9. What does a "perspective sketch" show you about an object?**

Perspective sketches provide the most realistic view of an object but are more difficult to create as all distances must be shortened.

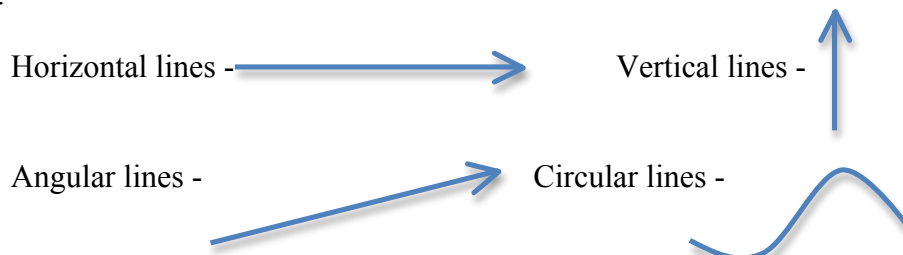
**10. What does a "floor plan" and an "elevation" show you about a building?**

A floor plan sketch is similar to a top view with the roof removed and shows interior walls, windows, doors, appliances, fixtures, built-in cabinetry and stairways. An elevation is similar to a front view and shows the height of the structure plus exterior materials like siding, doors, windows, trim and roofing.

**11. List in your own words the steps to follow in the making of a pictorial sketch:**

Analyze the object, layout the axis for an isometric sketch, sketch a light box parallel to axis with construction lines, draw changes in the shape of the object with light lines, add details like holes or rounded corners in light lines, darken visible lines and finally erase excess ones like hidden or center lines that should not be shown.

**12. Show and label with arrows the recommended methods for sketching the following lines:**



**13. Sketch an example of a "construction" line and explain how it is used:**



Construction lines are very thin, light lines and are used to layout preliminary shapes.

**14. Sketch an example of a "visible" line and explain how it is used:**



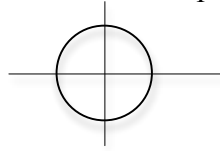
**Visible or object** lines are thick, solid lines and are used to show the outline or the visible edges of the object.

**15. Sketch an example of a "hidden" line and explain how it is used:**



**Hidden** lines are medium thick, dashed lines and are used to show edges or surfaces on the inside of an object or behind the top, front or side surfaces.

16. Sketch an example of a "center" line and explain how it is used:



**Center** lines are thin lines composed of long and short dashes and are used to locate the center point of holes or the central axis of a cylinder.

17. Is it necessary to erase "construction" lines?

Construction lines should not have to be erased.

Explain: Since construction lines are really light and only for a preliminary sketches, you can simply draw more lines to fix your sketch and then ignore the ones that were messed up in a final sketch with darker lines.

18. What shape does a circle become when sketched on a pictorial view?

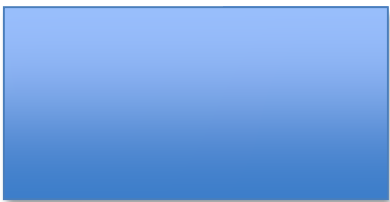
The circle should look like an ellipse.

19. Is it necessary to sketch objects in the proper "proportions"? Yes

Explain: Anything that makes your sketch more realistic or accurate will make it easier to read and interpret

20. Make freehand sketches of the following using appropriate "proportions" in the space below :

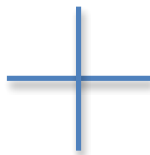
1" x 2" rectangle



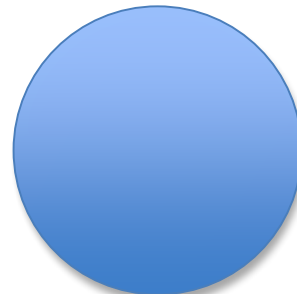
two 1.5" parallel lines 1/2" apart



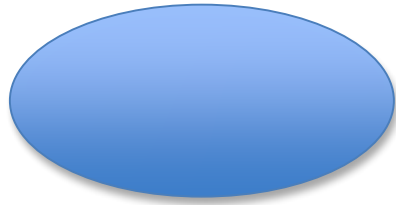
two 3/4" perpendicular lines



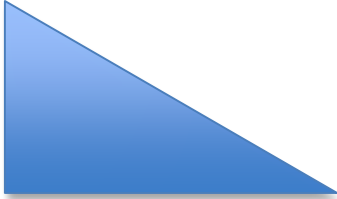
1.5" diameter circle



2" isometric ellipse



30°, 60° & 90° triangle



a 45°, 45° & 90° triangle

