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STUDY QUESTIONS FOR STEP 4

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

Sketching allows people to record ideas quickly on paper with out the use of tools, revise and refine sketches for presentation, and it helps in preliminary planning or drawing layout before using tools.

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

A multiview two-dimensional sketch shows the actual shape of an object from different directions that are 90° apart.

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

Top Side _____ Front Side _____ Right Side _____

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

- Analyze the object. Study it from all different directions, and gather details that would help in the creation.
- Layout the views. If the views do not fit in the space available, use a larger sheet of paper or reduce the proportions of the view.
- Block in the views. Sketch very light construction lines to establish the outline of each view.
- Locate details. Use very light construction lines to locate changes in the shape of an object and to show the location of holes or rounded corners.
- Add details. Use very light construction lines to create a box that represent the diameter of holes or radius of rounded corners. Sketch in holes and rounded corners using 90° arcs.
- Darken Visible lines. All lines that represent visible edges of the object should be shown as solid thick lines.
- Darken hidden lines. All lines that represent interior edges or hollow portions of the object should be shown as dashed medium thick lines.
- Add centerlines. Use thin long and short dashed lines to locate the center of holes and arcs.

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

A pictorial sketch shows the overall shape of an object from one direction. There are three types of pictorial sketches: isometric, oblique, and perspective. Perspective sketches provide the most realistic view of an object but are more difficult to create, as all distances must be shortened.

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

Isometric Oblique Perspective

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

The isometric is the easiest 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 it 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.

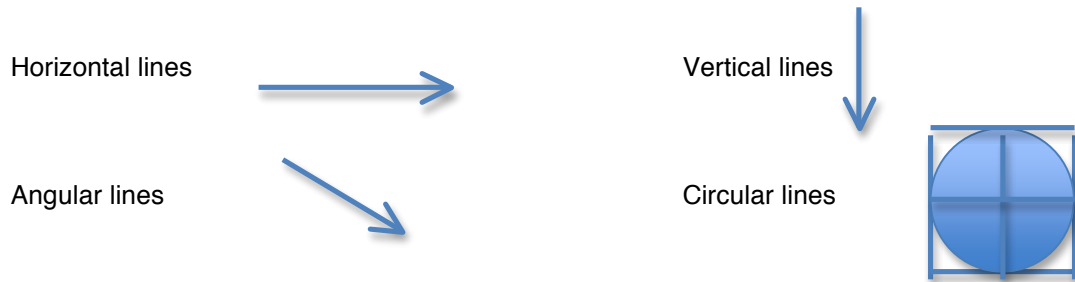
10. What does a "floor plan" and an "elevation" show you about a building?

A floor plan sketch shows interior walls, windows, doors, appliances, fixtures, built-in cabinetry and stairways. An elevation is similar and shoes 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. Determine the length, width, and height. Determine the type of pictorial view, and the type of paper.
- Layout the axis for an isometric sketch.
- Add dimensions to the axis. Estimate the height, width, and length.
- Block in the views. Sketch very light construction lines parallel to the axis to form a box that the object will fit in.

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 used to layout preliminary shapes.

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

These lines 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: 

These lines 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 used to layout preliminary shapes

17. Is it necessary to erase "construction" lines? Explain: Construction lines are there to layout preliminary shapes and do not need to be erased.

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

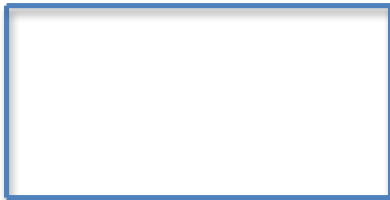
When sketched on a pictorial view a circle becomes a diamond.

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

Explain: Yes, otherwise your object would have different, unproportional dimensions when it is created.

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

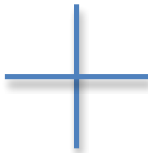
1" x 2" rectangle



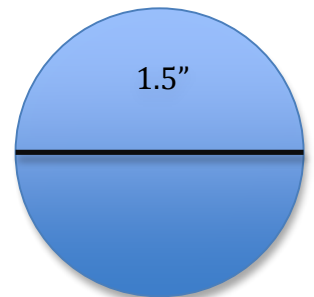
two 1.5" parallel lines 1/2" apart



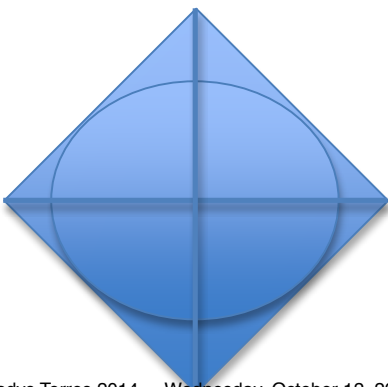
two 3/4" perpendicular lines



1.5" diameter circle



2" isometric ellipse



A 30, 60,
90 degree
triangle



A 45, 45,
90 degree
triangle

