

STUDY QUESTIONS FOR STEP 3

1. What is the function of the "Design Process"?

The "Design Process" is a systematic procedure used in industry to change ideas into useable products for consumers or other manufacturers.

2. List in your own word the ten (10) steps involved in the design of a product or a structure:

1. Identify, analyze and research the problem to have a complete description and understanding of the project
2. Brainstorm solutions to the problem and make freehand, multiview, or pictorial sketches of possible solutions
3. Discuss and share ideas with other designers, engineers, supervisors and managers
4. Take ideas from sharing and make a final solution sketch
5. Prepare a layout drawing to scale based on the final solution sketch
6. Use assembly drawings of all parts and sub-assemblies using scale detail
7. Make a list of materials of all parts and prepare specifications
8. Individually make each part, inspect them for accuracy, and use the parts to make a prototype.
9. Test operation of prototype for accuracy, reliability, and safety while checking assembly parts
10. Revise detail and assembly drawings if there are problems with the prototype and make technical illustrations for manuals and brochures

3. What is the "designer's" role in the "Design Process"?

Works with other designers analyzing problems and developing ideas into solutions

4. What is the "engineer's" role in the "Design Process"?

Works with other designers to make an idea work; selects materials, production methods and prepares final layout drawing of the final design

5. What is the "technician's" role in the "Design Process"?

Works with engineers, drafters and tradesmen in the assembly and testing of prototypes

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6. What is the "drafter's or detailer's" role in the "Design Process"?

Detailers work from engineer's layout drawings to prepare scale detail drawings of individual parts and assembly drawings of how parts fit together

7. What is the "illustrator's" role in the "Design Process"?

Works from detail drawings of individual parts and assembly drawings of how parts fit together to prepare three dimensional drawings for owner's manuals, repair instructions, assembly instruction sheets, brochures, charts, graphs, etc.

8. What is the "architect's" role in the "Design Process"?

Works with an experienced craftsman to learn how to use tools and machines to produce parts or construct products

9. A beginning drafter or cad operator is called a **Novice** and can be promoted to **designer** and **apprentice**.

10. What is the purpose of a "Design Project Statement"?

To tell people what you are doing before you actually do it

11. What is the purpose of a "Design Project Analysis"?

The questions you have to ask people before you design the solution