



Job Ready Assessment Blueprint

General Drafting and Design



Test Code: 3038 / Version: 01

“Measuring What Matters”

Specific Competencies and Skills Tested in this Assessment:

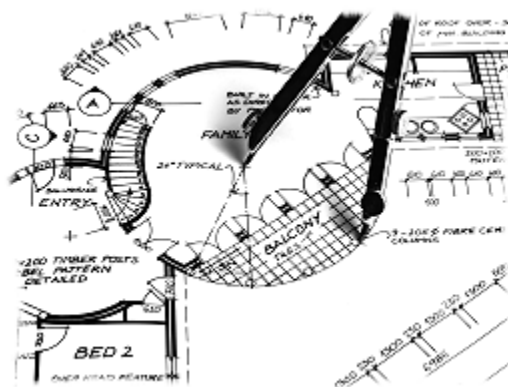
Preparing to Draw: Basic Drawing and Dimensioning Skills

- Measure lines, angles, and geometric features
- Draw lines and curved elements
- Construct assembly drawings and details
- Make revisions and apply change information
- Identify line types and prepare sketches
- Complete title block and apply reference information
- Differentiate the characteristics of drafting media
- Identify and operate drafting tools/instruments
- Perform lettering techniques



Geometric Construction

- Construct perpendicular lines
- Construct tangent lines and arcs
- Construct geometric shapes
- Bisect geometric elements
- Divide lines
- Construct three-point circle
- Transfer an angle
- Construct irregular curved lines



Drawing Techniques

- Demonstrate knowledge of orthographic drawings
- Demonstrate knowledge of shape visualization
- Demonstrate knowledge of pictorial drawing
- Demonstrate knowledge of schematic drawing

Specific Competencies and Skills continued:

Applied Mathematics

- Demonstrate knowledge of mathematical operations
- Demonstrate knowledge of geometry
- Demonstrate knowledge of trigonometry

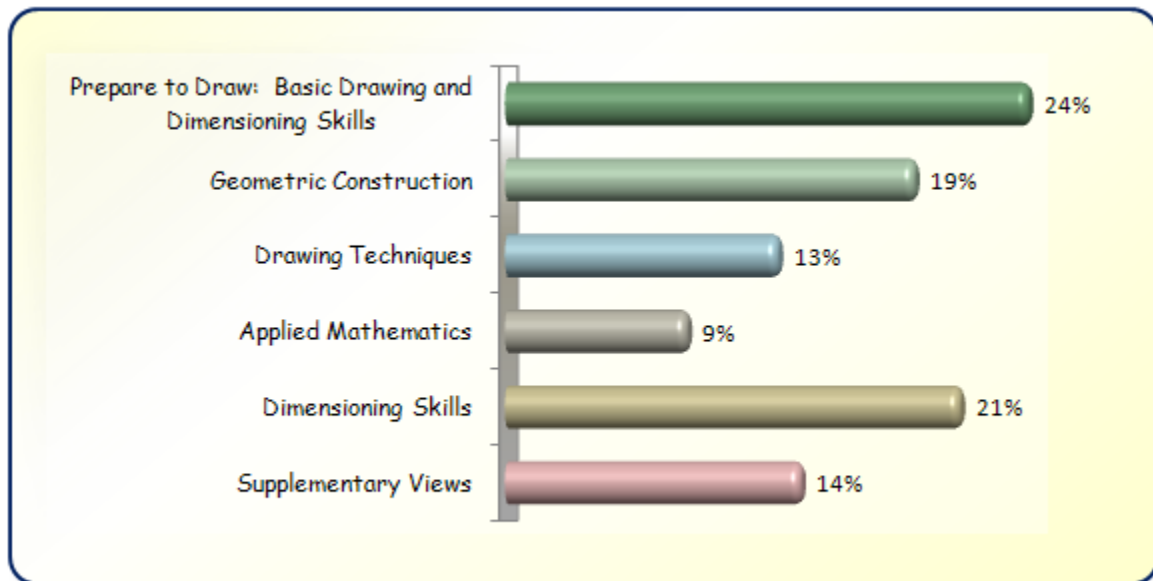
Dimensioning Skills

- Demonstrate knowledge of hole note information
- Demonstrate knowledge of various unit dimensioning systems
- Demonstrate use and placement of size and location dimensions
- Identify finished surfaces
- Demonstrate knowledge of tolerance dimensioning
- Place local and general notes
- Demonstrate knowledge of geometric dimensioning and tolerancing

Supplementary Views

- Differentiate between major surface types (normal, inclined, oblique)
- Identify and construct auxiliary views
- Draw true view, true length lines, and true angles
- Identify the techniques and rules of sectioning



Written Assessment:**Administration Time:** 3 hours**Number of Questions:** 118**Areas Covered:**

Sample Questions:

Any product design made up of two or more parts requires a/an

- A. auxiliary view
- B. assembly drawing
- C. orthographic view
- D. schematic drawing

Perpendicular lines can be drawn using a straightedge and a

- A. compass
- B. divider
- C. scale
- D. board

To convert inches to millimeters, multiply inches by

- A. 0.039
- B. 2.54
- C. 3.9
- D. 25.4

Finish marks are repeated in every view where the surface appears as a line, including _____ lines.

- A. extension
- B. hidden
- C. incline
- D. construction

When a cutting plane passes through an object removing one quarter of it, the result is called a/an _____ section.

- A. full
- B. half
- C. offset
- D. broken out



Performance Assessment:

Administration Time: 2 hours and 25 minutes CAD Option / 3 hours and 50 minutes Manual Option

Number of Jobs: 6

Areas Covered:

17% Geometric Construction

Use of tools, bisection of angle and X-Y, construction of parallel line, drawing of 2" diameter circle, construction of a hexagon and a triangle, and timeliness of job.

14% Auxiliary Views

Use of tools or computer program and construction lines, line quality on auxiliary view, division of circle, construction of ellipse, and timeliness of job.

24% Drawing Completion and Dimensioning

Use of tools or computer program and construction lines, line quality, Figure 1 and 2 solution, placement of dimensions, dimension of feature sizes and locations, lettering, and timeliness of job.

18% Machined Part Dimensioning

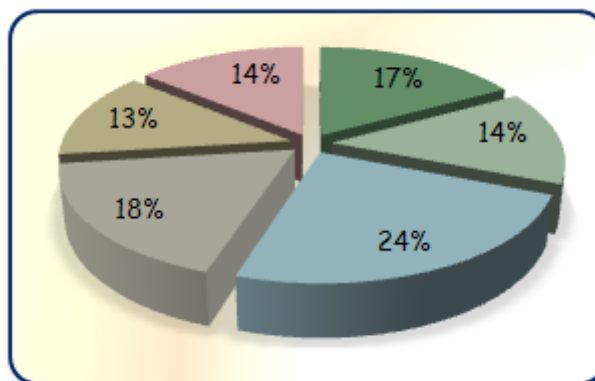
Use of tools or computer program, leaders, placement of dimensions, dimension of feature sizes and locations, lettering, concentricity note, and timeliness of job.

13% Pattern Development

Use of tools or computer program and construction techniques, line quality, construction of curve, and timeliness of job.

14% Section Drawing

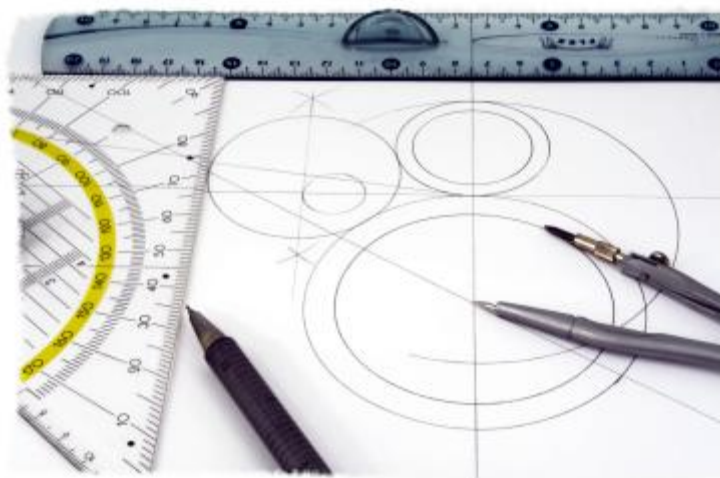
Use of tools or computer program and construction lines, section pattern, solution, line quality, and timeliness of job.



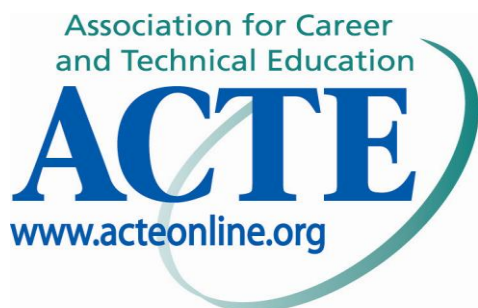
Sample Job: Geometric Construction

Maximum Time: 20 minutes

Participant Activity: The participant will complete six basic constructions using a compass and one straight edge; construction lines are not to be erased. This exercise is to be done manually.



The Association for Career and Technical Education (ACTE), the leading professional



organization for career and technical educators, commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!