



Job Ready Assessment Blueprint

Plumbing



Test Code: 3061 / Version: 01

“Measuring What Matters”

Specific Competencies and Skills Tested in this Assessment:

Professionalism

- Exhibit professional behavior
- Describe professional appearance/hygiene
- Identify professional ethics

General Practices

- Identify and use plumbing tools
- Demonstrate blueprint reading
- Interpret an isometric view of a draining, waste, and vent (DWV) system
- Identify plumbing materials and fittings
- Interpret general plumbing codes
- Interpret manufacturer's specifications

Building Drainage Systems

- Prepare and backfill trenches
- Use builder's level/laser
- Size/install drain/waste lines
- Size and install storm drains

Vent Installation

- Size/install a vent system for soil or waste drainage
- Differentiate between types of vents and venting systems

Traps

- Exhibit knowledge of proper trap placement
- Identify trap components
- Size/install traps
- Identify prohibited/approved traps
- Display familiarity with maximum trap arm length
- Identify trap seal loss



Specific Competencies and Skills continued:

Joining Pipes and Fittings

- Join copper pipes and fittings
- Join plastic pipes and fittings
- Join steel pipes and fittings
- Join cast iron pipes and fittings
- Join dissimilar material pipes and fittings



Installing Fixtures

- Install kitchen and lavatory fixtures
- Install water closets
- Install flushometers
- Install bathtub/shower
- Install faucets
- Install urinals



Water Supply Lines

- Layout/rough-in water service lines
- Size water line, including hammer arrestors and/or air chambers
- Exhibit familiarity with various valve types and required locations

Hot Water Systems

- Install water heater
- Install circulating system
- Install pressure/temperature relief valve on water heater
- Vent a gas water heater

Inspection Safety

- Demonstrate personal and tool safety
- Evaluate finished task for compliance with codes
- Pressure-test plumbing systems

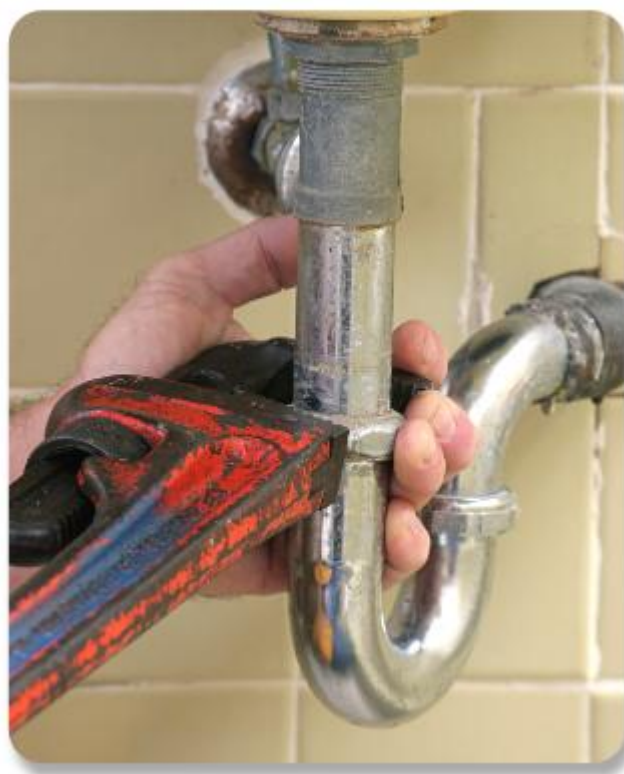
Plumbing Math

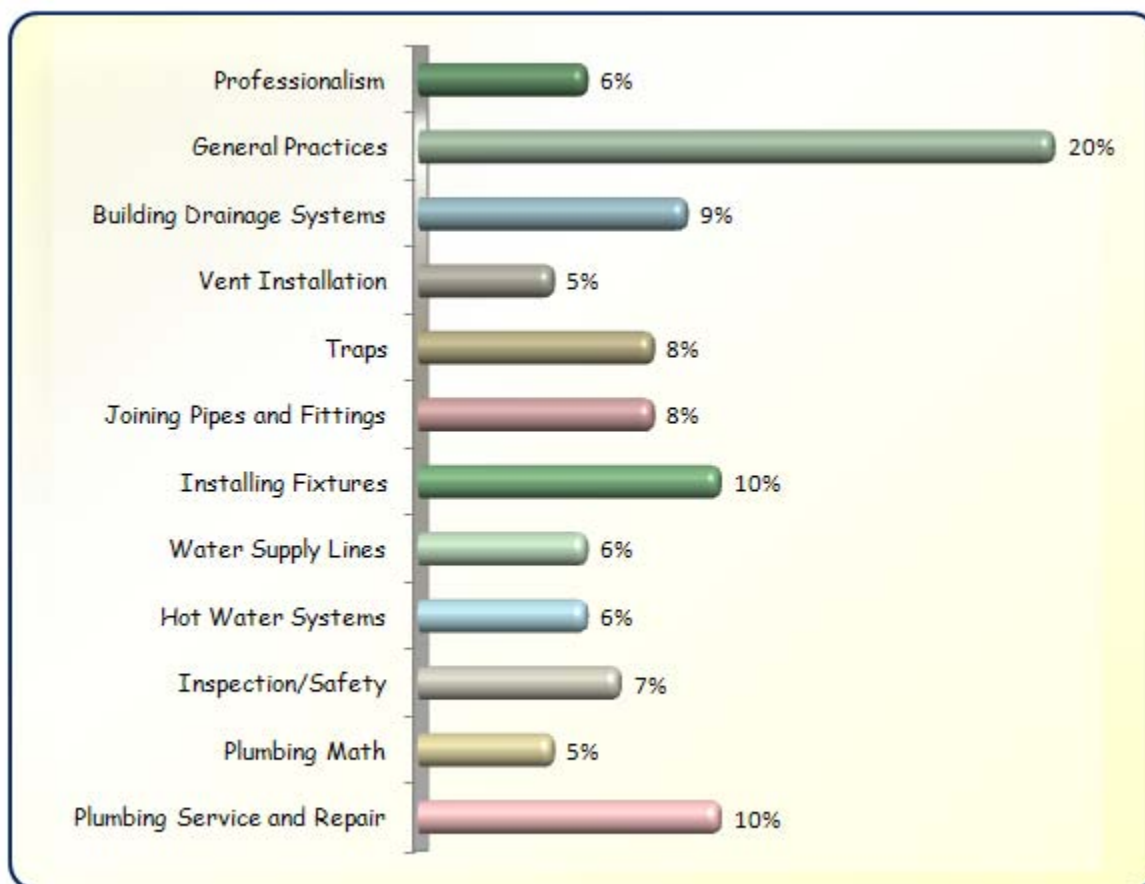
- Use formulas
- Add, subtract, multiply, and divide whole numbers and fractions
- Convert measurements

Specific Competencies and Skills continued:

Plumbing Service and Repair

- Repair washer and washerless type faucets
- Repair flushometers
- Repair ball cocks and flush valves
- Unclog drains and traps
- Replace kitchen plumbing appliances
- Display understanding of backflow preventers



Written Assessment:**Administration Time:** 3 hours**Number of Questions:** 194**Areas Covered:**

Sample Questions:

After replacing worn or broken faucet parts, the plumber should

- A. not tell the customer what was replaced
- B. hide the worn or broken parts out of sight
- C. only show the customer the new parts
- D. ask the customer if he/she wants to see the worn or broken parts



According to most plumbing codes, the minimum size stack receiving the discharge of two water closets in an apartment complex is a _____ pipe.

- A. 2 inch
- B. 2-1/2 inch
- C. 3 inch
- D. 4 inch

The purpose of venting traps is to

- A. remove foul odors from the waste line
- B. protect the trap seal from evaporation
- C. release back pressure on the waste line
- D. keep vacuum or pressure on traps to a minimum

The pressure in pounds per square inch at the base of a column of water 60-feet high is

- A. 26 pounds per square inch
- B. 30 pounds per square inch
- C. 40 pounds per square inch
- D. 60 pounds per square inch

How far above the flood level rim should an atmospheric vacuum breaker be located?

- A. 3 inches
- B. 4 inches
- C. 5 inches
- D. 6 inches

Performance Assessment:

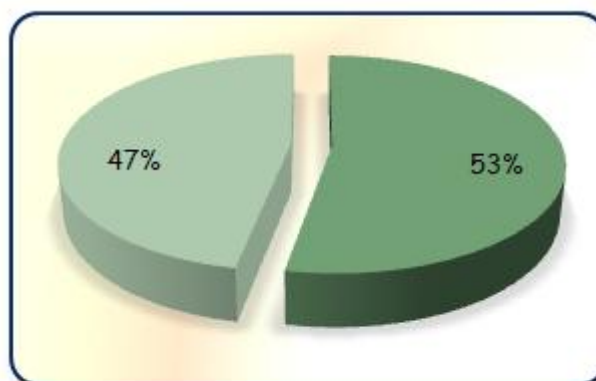
Administration Time: 4 hours

Number of Jobs: 2

Areas Covered:

53% Install and Pressure Test a DWV System

Selection of materials and tools, safe handling of tools and equipment, pipe measurement, cutting techniques, techniques for joining pipe and fittings, installation techniques, accuracy of fittings chosen and of measurements and cuts, rough-in, adhere to local plumbing code, pressure test, and economy of time.



47% Install and Pressure Test a Water Supply System

Selection of materials and tools, safe handling of tools and equipment, pipe measurement, cutting techniques, techniques for cutting, reaming and joining pipes and fittings, installation techniques, accuracy of fittings chosen and of measurements and cuts, rough-in, adhere to local plumbing code, pressure test, and economy of time.

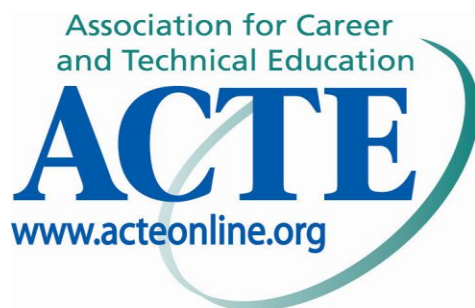
Sample Job: Install and Pressure Test a DMV System

Maximum Time: 2 hours

Participant Activity: The participant will study the rough-in sketch and drawings for a half bath. Measure and cut the pipe to the correct size with appropriate plumbing tools, using tools provided. Connect all pipes and fittings per rough-in dimensions. Install appropriate nail plates. Prepare pipes for pressure testing.



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!



The Pennsylvania Builder's Association utilizes this assessment to assist in determining competencies for granting skill certificates to students graduating from Pennsylvania secondary trade programs that have been endorsed by the Pennsylvania Builders Association (PBA).

PBA's services include support to workforce training and education by linking industry employers with educators to grow the workforce of tomorrow. PBA serves Pennsylvania communities and consumers through its steadfast efforts to protect homeownership rights and advocate for affordable housing options. PBA is affiliated with the National Association of Home Builders.

