

# UPC Chapter 5 Water Heaters

RV 11.7.23

## How to take this course.

1. Download and print the test questions.
2. Log in to your account with your ID and password.
3. Viewing your status page, scroll down and click on "[Click here to start this course.](#)"
4. Begin viewing the web pages. Refer to your printed test to find the correct answers. The questions track the web pages.
5. As you find the answers, circle them on your printed copy.
6. At the end of each section, you'll enter the quiz which is the same as your printed test. Refer to your circled answers when actually answering the quiz on the web.
7. Upon passing, you will proceed to the next section. If you failed to pass, you will be moved back to the beginning of that section for more review.



**Mobile users** – Many current mobile devices are compatible with AnytimeCE and will probably work. If not, use a desktop or laptop computer to complete your course.

### Quiz 1- Lesson 1

<b>TABLE 501.1(2)</b>											
<b>FIRST HOUR RATING<sup>1</sup></b>											
Number of Bathrooms	<b>1 to 1.5</b>			<b>2 to 2.5</b>				<b>3 to 3.5</b>			
Number of Bedrooms	1	2	3	2	3	4	5	3	4	5	6
First Hour Rating <sup>2</sup> , Gallons	38	49	49	49	62	62	74	62	74	74	74

For SI units: 1 gallon = 3.785 L

**Notes:**

<sup>1</sup>The first-hour rating is found on the "Energy Guide" label.

<sup>2</sup>Solar water heaters shall be sized to meet the appropriate first-hour rating as shown in the table.

1. According to Table 501.1(2), what is the recommended size water heater for a house with 3 bathrooms and 4 bedrooms?
  - 38 gallons
  - 49 gallons
  - 62 gallons
  - 67 gallons
  - 74 gallons
2. According to Table 501.1(2), what is the recommended size water heater for a house with 1 bathroom and 3 bedrooms?
  - 38 gallons
  - 49 gallons
  - 62 gallons
  - 26 gallons
  - 44 gallons
3. According to Table 501.1(2), what is the recommended size water heater for a house with 2 bathrooms and 5 bedrooms?
  - 49 gallons
  - 38 gallons
  - 62 gallons
  - 75 gallons
  - 74 gallons
4. Using the recommended sizes from Table 501.1(2), what size water heater is acceptable for a house with 3 bathrooms and 6 bedrooms?
  - 49 gallons
  - 120 gallons
  - 62 gallons
  - 100 gallons

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- 74 gallons
5. According to Table 501.1(2), what is the recommended size water heater for a house with 1 bathroom and 2 bedrooms?
- 38 gallons
  - 49 gallons
  - 62 gallons
  - 67 gallons
  - 74 gallons
6. Using the recommended sizes from Table 501.1(2), what size water heater is acceptable for a house with 1-1/2 bathrooms and 3 bedrooms?
- 38 gallons
  - 62 gallons
  - 42 gallons
  - 74 gallons
  - none of the answers provided.
7. I'm a homebuilder with a spare 38-gallon water heater; into which house can I install it according to Table 501.1(2)?
- 3 bedrooms, 1.5 bathrooms
  - 2 bedrooms, 2 bathrooms
  - 1 bedroom, 1.5 bathrooms
  - 2 bedrooms, 1 bathroom
8. All water heater installations must comply with the manufacturer's installation instructions.
- Yes, but only if the AHJ enforces it.
  - Yes, unless the AHJ makes an exception.
  - Yes, and it must also be approved by the AHJ.
  - This is recommended, but not required.
  - Not if the installers knows what they're doing.
- Lesson 2
9. Which activity may be performed on a water heater without a permit?
- maintenance
  - installation
  - removal
  - replacement
  - none of the answers provided.
10. An inspection of a chimney or vents shall be made before the chimney, vents or their parts are \_\_\_\_\_.
- permanently installed
  - shown to the homeowner
  - covered or concealed
  - readied for use
  - disclosed to the AHJ
11. When must a final water heater inspection be made by the AHJ?
- When the work authorized by the permit is installed.
- When 75% or more of the installation has been installed to code.
  - After covering or concealing all of the work.
  - None of the answers provided.
12. It is permissible to install a water heater in a bathroom \_\_\_\_\_.
- A. provided it is installed in a closet and is not visible
  - B. if it is installed in a closet with a listed gasketed door assembly and listed self-closing device
  - C. provided it is a direct-vent type
  - D. except if it is a direct-vent type
  - E. answers B and C
13. A fuel-burning water heater installed in a bathroom closet must have a self-closing door that \_\_\_\_\_, and must be equipped with a self-closing hinge to make the door close and latch after each time it is opened.
- is at least 3 feet tall
  - has ventilation holes or slats
  - swings open no less than 90 degrees
  - has a listed gasket
14. The self-closing hinges for the door of a bathroom closet water heater installation are not permitted to include a hold-open feature.
- True
  - False
15. A water heater other than a direct-vent type must be located \_\_\_\_\_.
- as close as practical to a chimney or gas vent
  - in a closet
  - adjacent to an exterior wall
  - within 10 feet of a window or exterior door
  - directly beneath a chimney or gas vent
16. A listed water heater must be installed with clearances that \_\_\_\_\_.
- do not interfere with combustion air
  - do not block a exterior windows
  - are no less than 18 inches on all sides
  - are recommended by the AHJ
  - allow access on all sides
17. Listed water heaters are **NOT** *a/ways* required to be installed in accordance with their manufacturer's installation instructions.
- True
  - False
18. All unlisted water heaters shall be installed with a clearance of at least \_\_\_\_\_ on all sides and rear.
- 6 inches
  - 8 inches
  - 10 inches

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- 12 inches
  - 18 inches
19. When an unlisted water heater is installed over \_\_\_\_\_, the floor shall be protected in an approved manner.
- an air duct
  - a combustible floor
  - a non-waterproof floor
  - a non-concrete floor
  - another water heater on the floor below
20. All water heater installations are to be provided with \_\_\_\_\_ by means of an approved and listed device.
- overpressure protection
  - under-pressure buffering
  - inlet water at no more than 5 gpm
  - an overpressure indicator
  - an elevated base

## Lesson 3

### No questions on Bonus Section pages 1 to 7

21. \_\_\_\_\_ water heater installations must be provided with over-temperature protection.
- Only listed
  - All except fuel-burning
  - All
  - Only unlisted
  - All except vent-type
22. Installation of vacuum relief devices shall be in accordance with the terms of their listings and the manufacturer's installation instructions.
- True, unless the AHJ makes an exception.
  - True, unless an unlisted device is used at the installer's discretion.
  - True, but only if it is installed after the final inspection.
  - True without exception.
  - False in the case of extenuating circumstances.
23. It is permissible to install a shutoff valve between the relief valve's discharge pipe and the atmosphere.
- No, it is dangerous to install any kind of device in the path of the discharge pipe.
  - Yes, provided the valve has a hold-on setting.
  - Yes, but only for use during maintenance.
  - No, not without the AHJ's approval.
  - Yes, provided it passes inspection.
24. It is \_\_\_\_\_ to install a shutoff valve between the relief valve and the water heater.
- mandatory
  - not permitted
  - not recommended

- recommended, but not required
  - not recommended, but required
25. The hourly Btu discharge capacity of a pressure relief device shall be \_\_\_\_\_ the input rating of the water heater.
- equal to
  - no more than
  - less than
  - at least 10% more than
  - no less than

## Quiz 2 Lesson 4

1. All water heaters deriving heat from fuels or other types of energy \_\_\_\_\_ must be constructed and installed in accordance with the approved standards.
- other than gas
  - except solar
  - not recognized by the AHJ
  - other than wood fire
  - only available in urban areas
2. An adequate supply of air for combustion and for adequate ventilation of heater rooms or compartments \_\_\_\_\_ provided for oil-burning water heater installations.
- should be
  - shall not be
  - shouldn't be
  - must be
  - none of the answers provided
3. Prior to installation of an oil-burning water heater, \_\_\_\_\_.
- the local fire department must be alerted
  - you should wash your hands
  - installation of an earthquake valve on the oil line is required
  - the AHJ must approve and follow the latest adopted NFPA code.
  - it is necessary to obtain a deviation request
4. The reference code for an oil-fired water heater is \_\_\_\_\_.
- the Uniform Mechanical Code
  - the currently adopted UPC
  - NFPA 31
  - the Flue Gas Code
  - NFPA 32
5. An indirect-fired water heater must conform to the following code:
- the ASME Boiler and Pressure Vessel Code
  - the Uniform Mechanical Code
  - the currently adopted UPC
  - NFPA 31
  - UL 732

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6. Each indirect-fired water heater shall have a label that meets \_\_\_\_\_ requirements.
  - UPC
  - UMC
  - ASHREA
  - ASME
  - RSES
7. Each indirect-fired water heater shall have a label showing that the appliance has \_\_\_\_\_ in accordance with ASME requirements.
  - met the weight requirement
  - been manufactured
  - not been repackaged
  - none of the answers provided
8. A single-wall heat exchanger in an indirect-fired water heater must utilize potable water or a fluid \_\_\_\_\_.
  - that is clear or translucent
  - of indeterminate class
  - recognized as safe by the EPA
  - that maintains its viscosity at high temperatures
  - recognized as safe by the FDA
9. The required label for an indirect-fired water heater that incorporates a single-wall heat exchanger must state \_\_\_\_\_ at the top.
  - DANGER
  - STOP
  - CAUTION
  - NON-POTABLE WATER
  - FDA APPROVED
10. The Authority Having Jurisdiction \_\_\_\_\_ the use of an approved dielectric insulator on the water piping connections of water heaters and related water-heating appliances.
  - shall require
  - may not require
  - is permitted to require
  - must discourage
  - is likely to forbid
11. In Seismic Design Categories C, D, E and F, a water heater must be strapped at points within the center one-fourth of its vertical dimensions.
  - True
  - False
12. In a location where a water heater must be strapped to resist seismic motion, the lower strapping point must be \_\_\_\_\_ the controls.
  - at least 4 inches from
  - 4 inches above
  - no closer than 6 inches from

- 4 inches below
- covering

## Lesson 5

13. In a location where a gas water heater must be strapped to resist seismic motion, it is possible that \_\_\_\_\_ earthquake protection valves on the gas lines.
  - the AHJ may forbid
  - the AHJ may require
  - a local fire department may require
  - an installer is permitted to refuse to install
  - a homeowner may forbid
14. A water heater supported from the ground shall rest on level concrete or another approved base with a height of at least \_\_\_\_\_ above the surrounding ground level.
  - 1 inch
  - 2 inches
  - 3 inches
  - 4 inches
  - 5 inches
15. When a water heater is located in an attic where damage may result from a leak, \_\_\_\_\_ shall be installed beneath the water heater.
  - a watertight pan without a drain
  - a waterproof floor
  - a drain
  - an absorbent pad
  - a watertight, corrosion-proof drainage pan
16. A required drainage pan installed beneath a water heater must be \_\_\_\_\_.
  - at least ¾ inches in diameter
  - no more than 1-1/2 inches deep
  - at least 1-1/2 inches deep
  - at least 25% wider than the water heater
  - made of non-corrosive metal
17. A non-direct-vent appliance installed in a beauty shop that uses flammable aerosol sprays shall be located in a separate equipment room \_\_\_\_\_.
  - adjacent to the bathroom(s)
  - that has an airtight gasketed door
  - with a door that has ventilation holes or slats
  - that has outside combustion and dilution air
  - measuring at least 4 feet by 4 feet
18. \_\_\_\_\_ shall be provided in commercial and industrial locations for comfort and proper working conditions for personnel.
  - Chilled beverages
  - Process air
  - Warm water for hand washing
  - Cooled process air

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- Combustion and dilution air
19. Appliances are not permitted to be installed in areas where the open use, handling, or dispensing of flammable liquids occurs.
- Yes, this is always true.
  - Yes, unless the AHJ makes an exception.
  - Yes, unless the design, operation, or installation reduces the potential of ignition of the flammable vapors.
  - No, this is incorrect.
  - No, these installations are permitted when the facility layout is such that it cannot be avoided.

20. A water heater in a garage that is separate from the living space shall be installed so that burners, burner-ignition devices and ignition sources are at least \_\_\_\_\_ above the floor, unless the appliance is listed as flammable vapor ignition resistant.
- 12 inches
  - 16 inches
  - 18 inches
  - 24 inches
  - 28 inches

21. When is it permissible to install a water heater at floor level in a residential garage?
- Only when the water heater is listed as flammable vapor ignition resistant.
  - Only when the garage is used for storage and not for parking cars.
  - Only when the water heater is located in a separate room.
  - Only when the AHJ has given approval as part of the permit process.

## Quiz 3 - Lesson 6

1. When installing appliances in an underground parking facility, what code is applicable?
- NFPA 31
  - NFPA 62
  - NFPA 88A
  - Mechanical Code
  - NEC 400
2. Is it permissible to install an appliance in a repair garage?
- No, this is never permitted because of the flammable fluids and vapors present.
  - Yes, provided the installation complies with NFPA 30A.
  - Yes, with the same restrictions as a residential installation.
  - Yes, but it must be installed in a detached room.
  - No, not unless there is no separate building available for the installation.

3. Appliances installed in an aircraft hangar must conform to \_\_\_\_\_.
- NFPA 400
  - NFPA 409
  - NFPA 31
  - NFPA 65
  - NFPA 88A

## No questions on 507.16 Venting of Flue Gases

4. A combination of water heaters, when used together, shall be installed with the standard that applies to an individual unit.
- True
  - False
5. The UPC requires that the installation crew leaves \_\_\_\_\_ in a readily available location at the job site upon completing a water heater installation.
- the manufacturer's installation instructions
  - the phone number of the installation company
  - a copy of the invoice
  - literature on the manufacturer's available companion appliances
  - the installer's maintenance recommendations
6. Is it permissible for indoor appliances to be installed outdoors?
- No, this is never permitted.
  - Yes, provided a shelter is built over the equipment.
  - Yes, but only if an equivalent outdoor appliance is not readily available.
  - Yes, but only in locations not subject to extreme weather conditions.
  - Yes, if the equipment is suitably protected from the outdoor environment.
7. Appliances and their vent connectors must be installed with clearances \_\_\_\_\_.
- of at least 12 inches on all sides
  - of no more than 3 feet from adjacent walls
  - from combustible material so their operation does not create a hazard
  - from noncombustible material
  - of at least 24 inches from other appliances
8. For a rooftop appliance installed in a protective enclosure, the minimum clearance between a service panel and the wall of the enclosure is \_\_\_\_\_.
- 16 inches
  - 24 inches
  - 30 inches
  - 36 inches
  - 48 inches

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9. Roofs upon which appliances will be installed must be designed to support the weight of the appliances.
- This is highly recommended, but not required by code.
  - Roofs are automatically designed to support more load than they'll actually carry.
  - Buildings with roofs not capable of supporting the weight must install lighter appliances.
  - Roofs not capable of supporting the extra weight are permitted to be reinforced.

10. Equipment and appliances on rooftops must be installed with \_\_\_\_\_.
- supervision by the AHJ
  - water-resistant tools
  - rubber seals
  - corrosion-resistant fasteners

## Lesson 7

11. Equipment and appliances \_\_\_\_\_ installed in accordance with the manufacturer's installation instructions.
- should be
  - need not be
  - typically are not
  - shall be
  - must appear to be

12. At least \_\_\_\_\_ shall be required between any part of the equipment or appliance installed on a roof and the edge of the roof.
- 3 feet of insulation
  - 6 feet of clearance
  - 8 feet of clearance
  - 2 feet of walking space
  - 5 feet of drainage area

13. Appliance installations on rooftops require a readily-accessible disconnecting means \_\_\_\_\_ the appliance.
- no further than arm's reach from
  - mounted to
  - within sight of
  - no more than 10 feet from
  - adjacent to

14. All equipment installed on rooftops must be supplied with a 120-VAC grounded-type receptacle \_\_\_\_\_ the appliance.
- mounted to
  - within reach of
  - no more than 4 feet from
  - within sight of
  - none of the answers provided

15. The rooftop equipment receptacle outlet shall be installed \_\_\_\_\_.

- on the supply side of the disconnect switch
- with fire-proof insulation
- at least 18 inches from the equipment
- on the most sheltered side of the equipment
- inside a locked tamper-proof box

16. A rooftop appliance installation that may have standing water at the appliance must have a platform and/or walkway installed \_\_\_\_\_.
- that is made of a non-corrosive material
  - at least 4 inches above the waterline
  - around the full perimeter of the appliance
  - above the waterline
  - none of the answers provided

17. Equipment and appliances are permitted to be installed in elevated locations.
- Yes, this is always permitted.
  - Yes, but only if a more easily accessible location is not available.
  - No, elevated installations are unsafe and are not allowed.
  - Yes, provided they are specifically designed for such locations.
  - Yes, provided they are accessible.

18. Buildings exceeding \_\_\_\_\_ shall have an inside means of access to the roof, unless other means of access are acceptable to the AHJ.
- 10,000 square feet
  - 15 feet in height
  - 280 feet in perimeter
  - 18 feet in height
  - 100 feet in length

19. The minimum trap door size for an inside means of roof access is \_\_\_\_\_.
- 22 inches by 24 inches
  - 24 inches by 30 inches
  - 28 inches by 36 inches
  - 22 inches by 36 inches
  - none of the answers provided

20. In the absence of rigidly fixed 42-inch or greater height rails, guards, parapets or similar building structures, the rooftop access opening must be at least \_\_\_\_\_ from the roof edge or similar hazard.
- 3 feet
  - 5 feet
  - 8 feet
  - 10 feet
  - none of the answers provided

21. \_\_\_\_\_ shall be provided at the roof access, with a switch located inside the building near the access leading to the roof.
- A light source

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- Permanent lighting
  - An emergency shutoff for the rooftop equipment
  - A 120-VAC grounded-type receptacle outlet
  - Emergency lighting
22. Access to an attic or under-floor appliance install must have an opening of at least 22 inches by 30 inches.
- No, this is not correct.
  - Yes, this is correct.
  - Yes, provided the appliance's largest component is smaller than 22" x 30".
  - Yes, provided the appliance's smallest component is smaller than 22" x 30".
  - It is not permissible to install an appliance in an attic.
23. If the attic is under 6 feet in height, the distance from the access opening to the appliance shall not exceed \_\_\_\_\_.
- 15 feet
  - 20 feet
  - 28 feet
  - 22 feet
  - 30 feet
24. The width of a passageway to access an appliance installed in an attic is required to be at least \_\_\_\_\_.
- 16 inches
  - 18 inches
  - 24 inches
  - 28 inches
  - 32 inches
25. A gas water heater installed in an attic must have a \_\_\_\_\_ (min) platform in front of its service side.
- level wooden
  - 30-inch by 30-inch level
  - 32-inch by 32-inch non-corrosive
  - 30-inch by 30-inch sturdy
  - 6-inch high
26. For an under-floor appliance installation, it is \_\_\_\_\_ to install a 120-volt receptacle and a lighting fixture near the appliance.
- convenient
  - recommended
  - unnecessary
  - sometimes required
  - mandatory
2. The two types of heating elements are \_\_\_\_\_.
- flange and screw-in
  - quick connect and nut & bolt
  - slip joint and pressure fit
  - flare fit and compression
  - flanged and un-flanged
3. Upper thermostats have a/an \_\_\_\_\_.
- override control
  - high-temperature safety cutout
  - low pressure cutout
  - high pressure cutout
  - low-voltage cutout
4. A pictorial wiring diagram is similar to an as-built illustration except that it uses \_\_\_\_\_.
- imaginary lines
  - actual wires
  - straight lines
  - pictures
  - standard symbols
5. A ladder wiring diagram is most useful for \_\_\_\_\_.
- understanding the sequence of electrical operation of the components
  - color-coding the wires
  - placement of the components in the actual system
  - understanding the number of wires and components required to build the system
  - none of the answers provided
6. Typical functioning for an electric water heater with a tank full of cold water begins with \_\_\_\_\_.
- the middle element heating the water at the middle of the tank
  - the lower element heating the water at the bottom of the tank
  - the upper element heating the water at top of the tank
  - both elements heating water at the same time
  - the upper and lower elements alternating on and off
7. The device that turns a heating element on and off is a \_\_\_\_\_.
- T&P valve
  - high-limit switch
  - thermostat
  - manual temperature switch
  - pressure switch

## Lesson 8

### Quiz 4 – Electric Water Heaters

1. A component that is not typically found on electric water heaters is the \_\_\_\_\_.
- upper heating element
  - middle heating element
  - lower heating element

## Lesson 9

8. If an electric water heater isn't producing hot water, the first item to check is the \_\_\_\_\_.
- limit switch in the upper thermostat

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- lower element
  - T&P valve
  - electrical breaker in the panel box
  - none of the answers provided
9. The temperature setting for a water heater thermostat should be \_\_\_\_\_ or less.
- 100 degrees F
  - 110 degrees F
  - 120 degrees F
  - 130 degrees F
  - 140 degrees F
10. At 130°F, a serious burn can occur within \_\_\_\_\_.
- 5 minutes
  - 2 minutes
  - 30 seconds
  - 10 seconds
  - 5 seconds
11. When testing for a bad heating element, a reading of \_\_\_\_\_ indicates that the element is good.
- 1 ohm
  - 16 ohms
  - 210 ohms
  - 450 ohms
  - 5000 ohms
12. A water heater with a broken dip tube allows cold water to \_\_\_\_\_.
- fall to the bottom of the tank
  - mix with the hot water in the tank, thus resulting in an even temperature
  - be discharged by the temperature & pressure relief valve
  - short circuit to the hot water outlet
  - none of the answers provided
13. Noise from the water heater is most likely due to \_\_\_\_\_.
- harmonics in the water supply piping
  - sludge boiling in the bottom of the tank
  - corroded heating elements
  - water hammer amplified throughout the system
  - a plugged overflow
14. The main purpose of an anode is to \_\_\_\_\_.
- prevent the tank from rusting
  - prevent electrical shock to the heating elements
  - kill pathogens in the water
  - prevent corrosion on the steel-to-copper pipe connections
  - replace dielectric unions
15. Leaking from the T&P valve is not likely caused by \_\_\_\_\_.
- a defective valve

- tank pressure approaching a dangerous level
- thermal expansion of the water
- a broken dip tube
- none of the answers provided

## Quiz 5 – Expansion Tanks Lesson 10

1. Forty (40) gallons of water heated from 50 degrees F to 120 degrees F will increase in volume by about \_\_\_\_\_.
- 1/2 gallon
  - 1 gallon
  - 2 gallons
  - 5 gallons
  - 7 gallons
2. Eighty (80) gallons of water when heated from 50 degrees F to 120 degrees F will increase in volume by about \_\_\_\_\_.
- 1/2 gallon
  - 2 gallons
  - 5 gallons
  - 7 gallons
  - None of the answers provided
3. An installation that allows thermally expanded water back into the water supply is known as a/n \_\_\_\_\_ system.
- closed
  - modern
  - open
  - standard
  - compliant
4. An installation that does not allow thermally expanded water back into the water supply is known as a/n \_\_\_\_\_ system.
- guarded
  - open
  - standard
  - compliant
  - closed
5. An over-pressurized water tank is likely to result in \_\_\_\_\_.
- collapse of the internal flue vent
  - opening of the T&P valve
  - physical deformation of the interior of the tank
  - piping leaks throughout the system
  - All of the answers provided
6. When water is allowed to continuously drip from the T&P relief valve, \_\_\_\_\_.
- it's prudent to place a drip pan to collect the water
  - it might be necessary to install a stronger valve
  - minerals from the water can build up on the valve, eventually blocking it
  - it should be piped back into the system



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- a licensed plumber should replace the valve with a plug

7. Pressure relief valves are typically set to \_\_\_\_\_.

- 50 psi
- 100 psi
- 150 psi
- 200 psi
- 300 psi

8. The major disadvantage of using a water relief valve is \_\_\_\_\_.

- the extra piping cost involved
- finding a suitable drain/sewer connection
- lack of freeze protection in cold temperatures
- increased water/energy costs
- none of the answers provided

## Lesson 11

9. The recommended expansion tank size for a system with a 20-gallon tank and a water supply pressure of 50 psi is \_\_\_\_\_.

- 2.0 gallons
- 3.2 gallons
- 4.4 gallons
- 5.5 gallons
- 10.3 gallons

10. The recommended expansion tank size for a system with a 65-gallon tank and a water supply pressure of 68 psi is \_\_\_\_\_.

- 1.5 gallons
- 2.0 gallons
- 3.2 gallons
- 4.4 gallons
- 10.3 gallons

11. The recommended expansion tank size for a system with an 80-gallon tank and a water supply pressure of 62 psi would be \_\_\_\_\_.

- 2.0 gallons
- 3.2 gallons
- 3.6 gallons
- 4.4 gallons
- 10.3 gallons

12. The recommended expansion tank size for a system with a 120-gallon tank and a water supply pressure of 42 psi would be \_\_\_\_\_.

- 2.0 gallons
- 3.2 gallons
- 4.0 gallons
- 4.4 gallons
- 10.3 gallons

13. A double check valve on the water supply line would indicate a/n \_\_\_\_\_ system.

- open
- closed
- up-to-date
- automatic
- manual

14. The UPC requires a water system that could allow flow back into the water supply to have a backflow prevention device installed.

- True
- False

15. A thermal expansion tank should be installed on the \_\_\_\_\_ the water heater.

- the hot water side of
- on top of
- cold water side of
- adjacent to
- on the ceiling above

16. A thermal expansion tank should be installed \_\_\_\_\_.

- horizontally
- vertically
- at a 45-degree angle
- at an angle that optimizes flow
- at any angle

17. What is the most important thing to consider during installation of an expansion tank?

- support of the tank
- pleasing the homeowner
- tank size
- tank orientation
- type of water piping