

## **Module 1: Codes and Standards**

- 1.01 In North Carolina, the office responsible for monitoring rehabilitation projects for historic properties impact is:
- 1.02 Codes governing the condition of existing buildings are not called:
- 1.05 Of the following personnel on a project, which, under state law, must hold a state license or certification?
- 1.08 Label the following items as typically found in:
- a) housing quality standard
  - b) building code
  - c) performance standard/general specification manual
  - d) work write-up
  - e) none of the above
- 1.09 Code training for North Carolina is offered through:
- 1.10 Code Enforcement Officers in North Carolina are licensed by:
- 1.13 In North Carolina, handrails are required for steps with \_\_\_ or more risers?
- 1.14 What is the minimum number of separate electrical outlets required for an existing “habitable space”?
- 1.15 In a single-family dwelling of one unit, smoke detectors are required:
- 1.16 Egressable windows and doors are required:
- 1.26 Smoke detectors are required:
- 1.27 The provisions of the North Carolina Residential Code for One and Two Family Dwellings shall apply to which of the following: (R101.2)
- 1.28. Accessory buildings, regardless of dimension, are not subject to the provisions of the North Carolina Residential Code for One and Two Family Dwellings. (R101.2)
- 1.29 Which of the follow best describes a “building thermal envelope”? (R202)
- 1.30 With the exception of the kitchen the minimum area of a habitable room as required by code is: (R304.2)
- 1.31 According N.C. Building Code every dwelling shall have at least one habitable room with not less than \_\_\_\_\_ square feet of gross floor space. (R304.1)
- 1.32 N.C. Building Code requires that, with the exception of \_\_\_\_\_, habitable rooms not be less than 7 feet in any horizontal dimension. (R304.3)

- 1.33 Every kitchen shall have not less than \_\_\_\_ square feet of gross living area. (R304.2)
- 1.34 Code requires that habitable rooms, hallways, toilet rooms, laundry rooms, and basements (containing habitable space) shall have a ceiling height of not less than \_\_\_\_ . (R305.1)
- 1.35 Code requires that habitable rooms, hallways, toilet rooms, laundry rooms, and basements (containing habitable space) shall have a ceiling height of not less than \_\_\_\_ . (R305.1)
- 1.36 According to code every dwelling unit shall be provided with all except which of the following. (R306.1)
- 1.37 N.C. Building Code permits the direct “straight pipe” discharge of “gray water”, such as that discharged from clothes washing machines, when such water is used for agricultural or landscape irrigation. (R306.3)
- 1.38 Code requirements regarding glazing to be replaced or installed in hazardous locations do not apply to renovation, and/or rehabilitation applications. (R308)
- 1.39 A rehabilitation carpenter plans to replace a window located in the center of the longest wall in an 11’x 12’ bedroom. There are no other doors or windows located on this wall. Which of the following conditions must exist in order for this window to be deemed located in a hazardous location, thus requiring tempered or other “safety” rated glazing. (R308.4)
- 1.40 The garage shall be separated from the residence and its attic area by not less than ½ inch gypsum board applied to the garage side. (R309.2)
- 1.41 Which of the following living space areas must have at least one openable emergency escape and rescue window or exterior door opening. (R310.1)
- 1.42 Circular stairways excluded, the maximum height of any step riser as allowed by code is \_\_\_\_\_. (R314.2)
- 1.43 Under no circumstances, are bars, grills or similar devices permitted to be placed over emergency escape and rescue openings. (R310.4)
- 1.44 By code, ramps shall have a maximum slope of: (R313.1)
- 1.45 According to the N.C. building code, ramps shall have a maximum slope of: (R313.1)
- 1.46 According to Code, the maximum riser height in any flight of steps is: (R314.2)
- 1.47 Which of the following statements is/are true regarding NC Residential Building Code requirements for ramps? (R313.2)
- 1.48 Which of the following statements is/are not true? (R313 & R316.1)
- 1.49 According to Code the maximum cross-section dimension of a handrail installed on an exterior flight of steps is: (R315.2)

- 1.50 Porches, Balconies or raised floor surfaces located more than 30 inches above the floor or grade shall have guardrails not less than 36 inches in height. (R316.1)
- 1.51 According to NC Residential Building Code handrails shall be installed on any flight of steps with \_\_\_\_\_ or more risers: (R315.1)
- 1.52 Which of the following statements is/are true according to NC Residential Building code? (R315.1)
- 1.53 Required guards on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures that do not allow passage of an object \_\_\_\_\_ inches or more in diameter. (R316.2)
- 1.54 According to Code, horizontal spacing between the vertical pickets in required guardrails shall be a maximum of \_\_\_\_\_ inches at the nearest point between members. (R316.2)
- 1.55 For any home rehabilitation requiring a permit smoke detectors must be installed in which of the following locations? (R317.1 & R317.1.1)
- 1.56 According to Code, smoke detectors installed in existing areas shall not be required to be interconnected and hard-wired if the rehabilitation activity does not result in the removal of interior wall or ceiling finishes exposing the structure. (R317.1.1 – Exception 1)
- 1.57 In most circumstances and applications Code requires that a vapor retarder be installed: (R322.1)
- 1.58 Which of the following would not require the structural component in question to be of an approved decay resistant species and grade of lumber or pressure treated. (R323.1)
- 1.59 A work write-up for a rehabilitation activity makes provision for the removal of a decayed and unsafe rear entrance porch/stoop. The porch is to be replaced with a 5' x 5' wooden deck. The new deck will be directly supported, in part, by attachment to the existing primary structure's rim joist. According to Code such attachment must be accomplished by which of the following methods? (R502.2.1 and Appendix M)
- 1.60 During the process of performing work required by a Rehab Work Write-Up the Contractor discovers that, due to moisture and termite damage, an entire floor girder and three adjoining joists must be removed and replace with new materials. According to NC Residential Building Code which of the following statements is true? (R501)
- 1.61 According to Code asphalt shingles shall only be used on roof slopes of \_\_\_\_\_ units vertical in 12 units horizontal or greater. (R905.2.2)
- 1.62 For roof slopes from two units vertical in 12 units horizontal (2:12), up to four units vertical in 12 units horizontal (4:12), two layers of underlayment shall be applied.
- 1.63 Which of the following activities may, according to Code, be performed without first securing a work permit? (301.1)

- 1.64 In new construction, all habitable rooms shall be provided with aggregate glazing area of not less than \_\_\_\_\_ percent of the floor area of the room. (303.1)
- 1.65 On an interior staircase, new handrails shall be placed no more than \_\_\_\_ inches from the nosing of the treads measured vertically. (315.1)
- 1.66 In all cases, new wood columns supporting overhead loads shall be of approved natural decay-resistant wood or approved pressure preservative-treated wood. (323)
- 1.67 The bottom of a new exterior footing can be less than 12 inches below grade if it is built upon ..... (403.1.4)
- 1.68 For roofing underlayment application, a roof with a slope of 3 inches in 12 inches requires a minimum of \_\_\_\_\_ of \_\_\_\_ felt over the sheathing overlapping successively every 19". (905.2.7)
- 1.69 Generally, combustible insulation such as blown cellulose shall be separated from recessed lighting fixtures, fan motors, and other heat producing devices by a minimum of \_\_\_\_ inch(es): (808.1)

## **Module 2: Inspections**

- 2.01 Use the following list to indicate the most likely point at which each item described below would occur:
  - a) Initial inspection
  - b) Progress inspection
  - c) Complaint inspection
  - d) Payment inspection
  - e) Final inspection
  - f) All of the above
- 2.02 Areas about which the rehab specialist should ask a homeowner during the initial inspection are:
- 2.03 Reasonable approaches to involving the homeowner in their rehab job include:
- 2.05 Which of the following lists of items best prioritizes what you should take to a progress inspection?
- 2.06 For items A through K, match the tools best used to detect each deficiency listed to the deficiencies described.
  - a.) Mirror
  - b.) Flashlight
  - c.) Binoculars
  - d.) Hose and measuring bucket
  - e.) Level

- f.) Ladder
- g.) Hammer and screw driver
- h.) Sharp steel probe
- i.) Measuring tape
- j.) Outlet tester
- k.) Knife
- l.) Can opener
- m.) Blower-door

- 2.07 The Section 8 HQS checklist is organized by:
- 2.08 The Section 8 HQS checklist:
- 2.09 A good “What to Expect” sheet for homeowners:
- 2.10 At an initial inspection; a rehab specialist should ask the homeowner about which of the following area?
- 2.11 Which of the following sign(s) is most often used to determine that an asphalt shingle roof needs replacing?
- 2.12 True or false: A good rehab inspector will always specify that a metal roof shall be replaced with an asphalt shingle roof?
- 2.13 The following material is often used but has proved to be inadequate for use as flashing around chimneys and roof penetrations.
- 2.14 Which ventilation system is more effective for removing heat and moisture from an attic?
- 2.15 What does 12/12 mean when discussing a roof’s pitch?
- 2.16 What type of roofing material is best for use on a 2/12 pitch roof?
- 2.17 The primary purpose of roofing felt is:
- 2.18 The number one threat to the structural integrity of a house can be summed up in which one word?
- 2.19 What is the most important tool a rehab specialist can possess?
- 2.20 In HUD-funded rehabilitation work, it is important to know how many people reside in the unit:
- 2.21 The following is a violation of Section 8 HQS and must be removed from any unit being rehabilitated with CDBG or HOME funds:
- 2.22 To prepare a proper work write up the following must be included:
- 2.23 The Section 8 HQS checklist is organized by:

- 2.25 Efflorescence on a block walls in the basement or crawlspace is the result of:
- 2.26 A French drain is used to
- 2.27 In North Carolina, moisture in crawlspaces leads to many problems. An effective way to help prevent excessive moisture in the crawlspace is:
- 2.28 All rehab specialists should have a basic understanding of which of the following trades.
- 2.29 In North Carolina, all new work performed in single family rehab jobs must meet the latest edition of the following code(s):
- 2.30 What is the maximum dollar amount of a housing rehab contract that can be legally signed by an unlicensed contractor in North Carolina?
- 2.31 Do Contractor's performing rehab work need a building permit in NC
- 2.32 How can you determine the volume of air leakage in a dwelling unit?
- 2.33 How can you tell if a heat exchanger in a furnace is cracked?
- 2.34 Which of the following is a sign that lead-based paint may be present?
- 2.35 In conducting your initial inspection of a frame house, you notice numerous small holes in a 4-foot long area of fascia board. The owner explains that she has had problem with woodpeckers, having seen them doing the damage many times. What is the most reasonable explanation?
- 2.36 You conduct your initial inspection during a prolonged drought. In the crawlspace, the ground appears dry. What symptoms would alert you to a persistent moisture problem?
- 2.37 According to HUD's Housing Quality Standards (HQS) Floor coverings that present a tripping hazard may be enough to fail a floor.
- 2.38 Identify the following parts from the illustration at right: *(1/2 point each)*
- a. Fly rafter. \_\_\_\_
  - b. Lookout \_\_\_\_
  - c. Frieze board \_\_\_\_
  - d. Sheathing \_\_\_\_
  - e. Soffit \_\_\_\_
  - f. Siding \_\_\_\_
  - g. Metal roof edge \_\_\_\_
  - h. Stud \_\_\_\_
  - i. Nailing block (for soffit) \_\_\_\_
  - j. Fascia \_\_\_\_
- 2.39 The following drawing illustrates what type of framing?

- A. Platform
- B. Saltbox
- C. Mansard
- D. Balloon
- E. Cripple stud

### Module 3: Work Write-Ups and Drawing

3.01 Match the following descriptive phrases with the terms listed from a to ii:  
 (Note: 1/6 point per correct answer)

- |                 |                  |                |
|-----------------|------------------|----------------|
| a. Ballast      | m. Flashing      | y. Return      |
| b. Beam         | n. GFCI          | z. Riser       |
| c. Bevel        | o. Grounding rod | aa. Sill       |
| d. Btu          | p. Jamb          | bb. Sill plate |
| e. CFM          | q. Joist         | cc. Sinkers    |
| f. Cupping      | r. LH door       | dd. Soffit     |
| g. Drip edge    | s. Liming        | ee. Span       |
| h. Drywall nail | t. Mullion       | ff. Stack      |
| i. Exposure     | u. O.C.          | gg. Truss      |
| j. Fascia       | v. OSB           | hh. VOC        |
| k. Finish       | w. Plenum        | ii. RH door    |
| l. Finish coat  | x. Rebar         |                |

- 3.02 Which is the better (more accurate) way to say or describe the following procedure?
- 3.03 Which is the best (most accurate) way to specify the following procedure?
- 3.06 What is the best way to organize a work write-up?
- 3.07 Which is the best location description for replacing 100 sq. ft of deteriorated siding?
- 3.08 Which of the following procedures will require a utility shut-off?
- 3.09 How is a scale used in drafting?
- 3.10 How many sides does a scale have?
- 3.11 How many feet are represented in 8 inches with a scale of 1/8: 1?
- 3.12 What is the purpose of a blueprint?
- 3.13 On what type of drawing would you find the location of the bathroom
- 3.14 If a 2 x 4 is drawn at its actual size it would be to scale:
- 3.15 The accepted architectural abbreviation for cubic yard is

- 3.16 The accepted architectural abbreviation for water heater is:
- 3.17 What is the purpose of a work write-up?
- 3.18 Which phrase best specifies the task of installing a front door:
- 3.19 Who should have a copy of the work write-up?
- 3.20 Which is an example of using command language?
- 3.21 When preparing a work write up, it is better to:
- 3.22 There are fewer instances of misinterpretation of a work write-up that contains:
- 3.23 When utilizing a proprietary specification in a work write-up, you should:
- 3.26 Computerized specifications always are
- 3.27 How do I organize my work write up to provide all the detail I need to share with contractors:
- 3.28 What is an appropriate bid alternate to replacing the washers in the faucet?
- 3.29 If I'm not sure how much I can spend on the furnace, but I want to find out the cost of various options, I can:
- 3.30 How do I create a work write-up that allows me to make choices later about what work will actually be done?
- 3.31 On what drawing would the setback of the building from the property lines be found?
- 3.32 To find out which edge of doors are to be hinged , look at the
- 3.33 The elevation of the finished first floor is usually found on the
- 3.34 An exterior wall stud height can best be determined from the
- 3.35 You have specified that roofing should be torn off down the decking, rotten decking to be replaced (contractor to bid a unit price for 100 sq. ft.) and roofing installed with felt, drip edge and shingles. When should your specification call for an inspection during the job?
- 3.36 How long should a reasonable manufacturer's warranty period be for the following items?
- 3.37 Standard practice in community rehab programs is that contractors are paid after each 1/3 of a job is completed. How would you address this in your work write up or payment schedule?

3.38 The following list of building components are represented in the foundation cross section in Figure 3.2 Place the corresponding letter of the component depicted in the space provided next to the term.

- A. \_\_\_ Concrete slab
- B. \_\_\_ French Drain
- C. \_\_\_ Poured Concrete Foundation
- D. \_\_\_ Polyethylene sheeting
- E. \_\_\_ Furring Strip
- F. \_\_\_ Polystyrene insulation
- G. \_\_\_ Cast Concrete Pier
- H. \_\_\_ Gravel fill
- I. \_\_\_ 3/8" plate glass
- J. \_\_\_ Cast Concrete Lintel
- K. \_\_\_ 3/4" Anchor Bolt
- L. \_\_\_ 2X6 Dimensional Lumber
- M. \_\_\_ Brick

3.39 The following list of building components are represented in the stair cross section in Figure 3.3. Place the corresponding letter of the component depicted in the space provided next to the term.

- A. \_\_\_ Rise
- B. \_\_\_ Run
- C. \_\_\_ Plywood tread and riser
- D. \_\_\_ Chamfered edge
- E. \_\_\_ Finished Wood flooring
- F. \_\_\_ Stringer
- G. \_\_\_ Carriage
- H. \_\_\_ Spacer
- I. \_\_\_ Fire Blocking
- J. \_\_\_ Soffit
- K. \_\_\_ Ledger

3.40 What is the most common scale used in drafting?

3.41 What sizes below are represented on a scale?

3.42 What scale is commonly used in drafting electrical systems?

3.43 What drawing is most likely to show the sizes of materials used in wall construction?

3.44 What is indicated by a heavy line drawn through it with an arrow head and a letter in a circle at each end?

3.45 Which drawing in a set of construction drawings corresponds with a top view in an orthographic projection?

- 3.46 Which drawing in a set of construction drawings corresponds with a side view in an orthographic projection?
- 3.47 How would dimensions be written for an element that is three feet and one-half inches in length?
- 3.48 The accepted architectural abbreviation for centerline is:
- 3.49 The accepted architectural abbreviation for plywood is
- 3.50 A drawing has the denotation “NTS” under its title. This means:
- 3.51 The type of font that is easiest to read is:
- 3.52 Suppliers of spec programs include
- 3.53 How do I incorporate homeowner options for paint color into my work write-ups?
- 3.54 What are the criteria you would use to evaluate a computerized specification program that you are considering for purchase? List 5.
- 3.55 The cost range, in dollars, for useful computerized specification programs is:
- 3.56 A view looking from the top downward in an orthographic projection is:
- 3.57 A view showing a vertical cut through the construction is called:
- 3.58 The most commonly used scale for floor plans is:
- 3.59 To determine a missing dimension:
- 3.60 Centerlines are indicated by a:
- 3.61 Which of the following dimensions below would be found on a blueprint?
- 3.62 A complete set of drawings would be compiled in which of the following orders?
- 3.63 Match the following elements with their description:
- A. \_\_\_ Joist
  - B. \_\_\_ Header joist
  - C. \_\_\_ Stud
  - D. \_\_\_ Bridging
  - E. \_\_\_ Header
  - F. \_\_\_ Subfloor
  - G. \_\_\_ Top Plate
  - H. \_\_\_ Underlayment
  - I. \_\_\_ Sheathing
  - J. \_\_\_ Drywall

- 3.64 When dimensions are shown in three rankings, which one will represent the overall dimension of the building?
- 3.65 When a door swing is shown as a dotted line in a plan view it means
- 3.66 I am asking for bids on replacement of a section of vinyl kitchen flooring with a repeating pattern every 4 inches. The essential component(s) of my write-up for the bidder will be:
- 3.67 This property has a (A) faucets that drip, (B) leaking roof, (C) deteriorated vinyl kitchen flooring, (D) unsightly, (E) rat-infested outdoor trash area, (F) worn carpet, (G) very old, but working furnace. Select the two items you would fix like new.
- 3.68 The following list of electrical fixtures is represented by one of the symbols found in Figure 3.1. Place the corresponding letter next to each of the terms listed below.

- A. \_\_\_ Track Light
- B. \_\_\_ Duplex Floor Outlet
- C. \_\_\_ Generator
- D. \_\_\_ Fan Receptacle
- E. \_\_\_ Lighting panel
- F. \_\_\_ Dimmer switch
- G. \_\_\_ Special Purpose Outlet
- H. \_\_\_ Single Pole switch
- I. \_\_\_ Fluorescent Fixture
- J. \_\_\_ Chime
- K. \_\_\_ Thermostat
- L. \_\_\_ Power Panel
- M. \_\_\_ Switch/Receptacle
- N. \_\_\_ Television Outlet
- O. \_\_\_ Recessed Light
- P. \_\_\_ Duplex Outlet
- Q. \_\_\_ Telephone Outlet
- R. \_\_\_ Exit Light Outlet
- S. \_\_\_ Transformer
- T. \_\_\_ Pushbutton
- U. \_\_\_ Ceiling incandescent
- V. \_\_\_ Motor
- W. \_\_\_ Panel board, Recessed
- X. \_\_\_ 3-way Switch
- Y. \_\_\_ Junction Box
- Z. \_\_\_ Under floor Junction Box
- AA. \_\_\_ Computer data
- BB. \_\_\_ Wall incandescent
- CC. \_\_\_ Disconnect switch
- DD. \_\_\_ Panel board surface

- 3.69 In which drawing would you find a benchmark:

3.70 When planning a kitchen a work triangle formula is used to determine the efficiency of your kitchen plan, your trip from refrigerator to sink to range should be no longer than:

3.71 Effective rehab work write-ups include which of the following:

3.72 Identify the items shown in the following drawings. *(1/2 point each)*

- |                         |                            |                     |
|-------------------------|----------------------------|---------------------|
| A. Rowlock header _____ | D. Bed joint _____         | G. Head joint _____ |
| B. Wythe _____          | E. Stretcher _____         | H. Soldier _____    |
| C. Header _____         | F. Rowlock stretcher _____ |                     |

3.73 To “corbel out” means to:

3.74 In construction, “wane” in wood is:

### **Module 4: Cost Estimating**

4.01 Roofing materials and labor are typically priced by the:

4.02 Installation of wiring is usually priced by the:

4.03 For what types of work are contingencies (A) higher? (B) Lower?  
Place the appropriate letter in the space provided:

4.04 Concrete is priced by the:

4.05 What is an appropriate contingency amount for rehabilitation estimates for moderate rehab?

4.06 What is the “rule of thumb” for calculating profit and overhead for general construction?

4.07 Roofing is typically estimated by:

4.08 Framing is typically estimated by the:

4.09 Plumbing is estimated by the:

4.10 All estimates should be developed from costs broken down by:

4.11 An estimated price for a job should be based on:

4.12 A good way to determine current labor rates is to:

4.13 If you keep a list of material prices, you should update that list:

4.14 Window prices can be estimated by:

4.15 Door installations are estimated based on:

- 4.16 Should the cleanliness of the unit factor into the estimated price?
- 4.17 Should demolition and waste disposal be figured into an estimate?
- 4.18 Should you have a contingency cost added to your estimate for unexpected items that were not in the work write-up?
- 4.19 What is the best way to determine the costs for items in your estimate?
- 4.20 When developing a price for a change order item, which is the more effective choice:
- 4.21 If a necessary change order will cause you to exceed your budget on a unit you should:
- 4.22 Estimating rehab work is easier than new construction. The previous statement is:
- 4.23 How can you measure the height of a wall while standing on the ground?
- 4.24 The smallest unit of measurement on most standard tape measures is:
- 4.25 When providing measurements of a room to be used in an estimate, you should measure the room to the nearest:
- 4.26 I should review my cost database every:
- 4.27 1 cubic yard is equal to the following
- 4.28 Match the following list of prices with the most appropriate items:
- A. Installed electrical outlet box with wiring \_\_\_\_
  - B. A new foundation for a 30' x 40' house over a crawl space \_\_\_\_
  - C. The complete re-plumbing of a bathroom with all new economy fixtures \_\_\_\_
  - D. Removal of 100-sq. ft. of roofing materials down to the sheathing and replacement with drip edge felt and shingles. \_\_\_\_
  - E. Installed exterior steel door with a single small light. \_\_\_\_
- 4.29 Calculate the total number of square feet in area x. of Figure 4.1:
- 4.30 You are calculating the material needed for a flooring installation in area x. The most efficient and economical use of standard sheet goods with a pattern repeating every foot would lead you to estimate the following quantity for this application. (Figure 4.1)
- 4.31 Regarding Figure 4.1, assume that the complete subfloor and its substructure need to be replaced in area x. What size lumber should be specified as joist material in this application?
- 4.32 Regarding Figure 4.1, assume that the complete subfloor and its substructure need to be replaced in area x. What type of subfloor sheathing should be used?

- 4.33 Regarding Figure 4.1, assume that the complete subfloor and its substructure need to be replaced in area x. How many sheets would be needed to complete this project (Figure 4.1)?
- 4.34 Regarding Figure 4.1, assume that the complete subfloor and its substructure need to be replaced in area x. What type of door is designated in this floor plan (Figure 4.1)?
- 4.35 Which of the following is consistent with the Pythagorean Theorem?
- 4.36 How can you use the Pythagorean Theorem to get the length of the slope of a roof?
- 4.37 If the east and west walls of a rectangular room are 9 feet long and the diagonal measurement of the room is 15 feet, how long are the north and south walls?
- 4.38 How many ton(s) of gravel are in 1 cubic yard of gravel?
- 4.39 Should there be a line item for the contractor to charge for travel reimbursement in the estimate?
- 4.40 One square foot is equal to:
- 4.41 One cubic yard is equal to:
- 4.42 One cubic foot is equal to:
- 4.43 What is the number of board feet in an order of SYP framing lumber consisting of 100 – 2 x 6 x 10 plus 20 – 2 x 12 x 20?
- 4.44 What is the minimum amount of concrete that would be needed to pour a four-inch thick slab for a 12' X 20' room? (*Do not include footers or a waste factor.*)
- 4.45 If a cubic yard of crushed stone weighs 1.33 ton, a cubic foot weighs approximately how much?
- 4.46 Approximately how many common bricks (not including waste) would be used in a veneer wall measuring 8' X 10'?
- 4.47 What is the area of a gable if the house is 24 feet wide and the roof has a 5:12 pitch?
- 4.48 To estimate the number of 8" X 16" concrete blocks required to build a foundation wall (not including waste), you can divide the wall's square footage by:
- 4.49 The square footage of a room that is 12 feet wide by 13 feet long is:
- 4.50 The slope of a roof is stated as:
- 4.51 Sheet vinyl comes in a standard width of:
- 4.52 A "right handed door":

- 4.53 A kitchen floor measures 20' wide by 22' long. How many 8" x 8" floor tiles are required to cover the floor? (Do not include waste.)
- 4.54 Three bedrooms need 5/8" underlayment. The rooms measure 12' x 12', 14' x 16' and 10' x 14'. How many sheets of underlayment are required to cover the total floor area of the rooms? (Do not include waste.)
- 4.55 How much concrete would be needed to pour an 8-inch deep footing that measures 160 linear feet in total length by 18 inches wide? (Do not include waste or margin.)

## **Module 5: Project Management**

- 5.01 A Change Order form should be signed by the following:
- 5.02 A good practice is to ensure that a contractor possesses which of the following insurance prior to participating in a rehab program?
- 5.03 What is the maximum dollar amount of residential construction work that someone may contract in North Carolina without obtaining a building permit?
- 5.04 The contractor application is not used to:
- 5.05 The key players in a housing rehabilitation project are:
- 5.06 Which of the following are not legally acceptable methods for selecting contractors in a federally funded homeowner rehab program?
- 5.07 Workers' compensation insurance covers:
- 5.08 Acceptable means of controlling the cost of change orders include:
- 5.09 The purpose of bid additions and bid alternates is to:
- 5.10 A waiver of liens: (Purpose)
- 5.11 The person responsible for providing the manufacturer's warranty to the homeowner is:
- 5.12 The purpose of a list of qualified contractors is to:
- 5.13 Important items to check when qualifying contractors include:
- 5.14 The bid package should include:
- 5.15 If 4 bids are received for a job from pre-approved bidders, but none of them come within the acceptable range of the in-house cost estimate, then:
- 5.16 Among items to discuss at the pre-construction conference are:

- 5.17 The most important job of the rehab specialist during construction is to:
- 5.18 The purpose of a release of liens form is to:
- 5.19 You have a dispute with a concrete contractor over proper treatment and curing methods in cold weather. You would:
- 5.20 The most serious federal sanction against a building contractor is called...
- 5.21 The federal procurement rules state that formal bidding is preferred for:
- 5.22 Competent bids should be within \_\_\_\_\_ of your cost estimate?
- 5.23 If a newly installed pipe bursts, and water damages the homeowner's new drywall and carpet, the homeowner would be made whole because...
- 5.24 Bonding is generally required by federal rules for construction jobs over:
- 5.25 Adequate retainage is...
- 5.26. The typical warranty period for labor is:
- 5.27 How many employees can a rehab contractor employ full-time and not carry worker's compensation insurance?
- 5.28. What is the maximum dollar amount of a construction contract that someone may obtain in North Carolina without a NC general contractor license?
- 5.29 What is the maximum dollar amount of electrical work that someone may perform in North Carolina without a NC electrical license?
- 5.30 Workers' compensation premiums are based on:
- 5.31 A letter of credit is:
- 5.32 Effective strategies for establishing and maintaining good relations with contractors do not include:
- 5.36 Typically, liquidated damages are:
- 5.37 A rehab general contractor's one-year warranty period means:
- 5.38 With regard to N.C. building code applicability, the so-called "50-percent rule"...
- 5.39 Federal procurement regulations for rehabilitation contracting under HUD grant programs...
- 5.40 In North Carolina, if a subcontractor on a rehabilitation job does not carry workers' compensation and is not required by law to do so:

## **Module 6: Plumbing**

- 6.01 The primary purpose of a “trap” is to:
- A. Catch rings and other objects lost down the drain of a sink to prevent them from entering the plumbing drain system
  - B. Prevent siphoning of the drain water
  - C. Make the connection of pipes easier
  - D. Prevent gas from leaking into the house
- 6.02 True or False (*mark T or F*). Other functions of a drain trap include:
- A. Catch rings and other objects lost down the drain of a sink to prevent them from entering the plumbing drain system. \_\_\_\_
  - B. Prevent siphoning of the drain water. \_\_\_\_
  - C. Make the connection of pipes easier. \_\_\_\_
  - D. Prevent gas from leaking into the house. \_\_\_\_
- 6.03 True or False (*mark T or F*). The same type of Teflon tape should be used when joining both water and gas fittings. \_\_\_\_
- 6.04 True or False (*mark T or F*). Water pressure is affected by the number of bends and joints in a water line. \_\_\_\_
- 6.05 True or False (*mark T or F*). Water pressure is affected by the size of pipe to the fixture. \_\_\_\_
- 6.06 True or False (*mark T or F*). Galvanized water pipe must be removed from a house because of the danger of lead poisoning. \_\_\_\_
- 6.07 True or False (*mark T or F*). “Black” pipe may not be used for water lines. \_\_\_\_
- 6.08 True or False (*mark T or F*). The existence of copper pipe in an existing house may present a lead poisoning risk. \_\_\_\_
- 6.09. True or False (*mark T or F*). Lead in soldering is still used today \_\_\_\_
- 6.10 Plumbing fixture drains must be vented if (one or more answers may be correct):
- 6.11 A drain pipe under a sink that goes straight down then bends up, then bends straight down again into the floor is called a (one or more answers may be correct):
- 6.12 Plumbing vents are essential for:
- 6.13 Galvanized metal plumbing pipes appear:
- 6.14 Drum traps look:

- 6.15 Dryer/washer/vent traps built into waste systems exist in order to perform which of the following as their primary function?
- 6.16 Waste lines require:
- A. heat
  - B. fall
  - C. 90 degree turns
  - D. toggle bolts
- 6.17 The plumbing vent system serves which of the following purposes:
- 6.18 What do the initials UPC stand for?
- 6.19 Copper tubing is not used in gas supply applications because?
- 6.20 What material should never be used to construct water supply lines:
- 6.21 Waste water lines in homes built prior to 1950 were constructed of what material?
- 6.22 A cleanout is used to:
- 6.23 A hose-bib is also known as:
- 6.24 A whole house water filter can:
- 6.25 Galvanized pipe is no longer recommended for use because:
- 6.26 The function of a vent stack is to:
- 6.27 The frost line:
- 6.28 If lead is found in well water the following would be the most practical and efficient remedy
- 6.29 This type of drain may be repaired if broken, but must be changed to another type if the pipes in the floor or wall are exposed.
- 6.30 The purpose of a “drip leg” is to:
- 6.31 The correct type of “plastic” or non-metallic pipe for water lines is identified by:
- 6.32 What do the initials DWV stand for in plumbing jargon?
- 6.33 The following types of pipe are most typically used for supply lines?
- 6.34 The following transition in pipe materials requires a special dielectric fitting or the joint will corrode.

- 6.35 Which of the following is not a type of plastic rigid pipe:
- 6.36 What is another name for “Quest” pipe?
- 6.37 What must be used when joining PVC and ABS pipes:
- 6.38 Why is “Quest” pipe prone to failure
- 6.39 Water shut off valves should be installed:
- 6.40 The minimum recommended distance between a well and a septic system is:
- 6.41 Water heater factory temperature setting and recommended safe setting is:
- 6.42 The trap most likely to be used when re-plumbing a house is:
- 6.43 What is a "buffalo box"?
- 6.44 Shutoff valves are often located throughout the supply system because?
- 6.45 The grade of a waste line toward a soil stack should be?
- 6.46 New fixtures added to a plumbing system...
- 6.47 Match the following names fittings with the diagrams of fittings depicted in figure 6.1
- A. \_\_\_ 90-degree elbow
  - B. \_\_\_ 45-degree elbow
  - C. \_\_\_ Tee
  - D. \_\_\_ Coupling
  - E. \_\_\_ Reducing coupling
  - F. \_\_\_ Drop ell
  - G. \_\_\_ Cap
  - H. \_\_\_ Street ell
  - I. \_\_\_ Reducing tee
  - J. \_\_\_ Nipple
  - K. \_\_\_ Union
  - L. \_\_\_ Sanitary tee
  - M. \_\_\_ Sanitary cross
- 6.48 Compression fittings are appropriate to use when?
- 6.49 Fittings for turns in a plumbing system are offered in which of the following increments
- 6.50 PVC pipe with an outside diameter of 7/8" is referred to as?
- 6.51 To address a noisy pipe problem the following feature can be included in your supply design?

- 6.52 The following are types of main supply line valves?
- 6.53 The following are types of stem faucets?
- 6.54 The following are types of Kitchen sink faucets?
- 6.55 What is the appropriate size of the main water supply line for a single unit home?
- 6.56 When joining PVC or ABS pipe, the cement bonds the material together:
- 6.57 An anti-siphon valve is required on:
- 6.58 An anti-freeze valve is required on:
- 6.59 The minimum required pitch of waste pipe to city sewer pipes is:
- 6.60 A well should be located no closer than how many feet to the sewage disposal field or septic system:
- 6.61 A "shallow" well would be one that was dug or bored less than:
- 6.62 The daily water use of a typical home of four, not including the watering of lawns and the washing of cars is:
- 6.63 If drinking water was found to contain this, it would be considered relatively hazardous to humans:
- 6.64 Hard water would be defined by the presence of which of the following?
- 6.65 If high contents of Sodium and Chloride are detected in a well water system the following appliance should be used:
- 6.66 For information concerning the quality of well water, one would consult:
- 6.67 Private well drinking water and the contamination of thereof is governed by:
- 6.68 The condition of public water and it's quality is governed by:
- 6.69 A 30-gallon electric water heater is installed in a closet of a dwelling unit. The relief valve drain line, according to Code, must \_\_\_\_\_?
- 6.70 A 40-gallon hot water heater requires a combination temperature and pressure relief valve. The valve drain outlet is ½ inch. According to code, the drain line, then, should be \_\_\_\_\_ inch.
- 6.71 The plumber, according to code, is responsible for providing adequate protection to prevent the water system from possible:
- 6.72 What is a common name for a water closet?

- 6.73 Of the following valves, the one Code-approved for a building water supply line is a:
- 6.74 The minimum diameter acceptable by Code for a building water supply line is \_\_\_\_\_ inch.
- 6.75 An individual vent pipe that serves a 4-inch waste pipe, according to Code, cannot be smaller than \_\_\_\_\_ inches.
- 6.76 According to code a lavatory, bathtub and/or shower “wet vent” cannot be smaller \_\_\_\_\_ inches in diameter.
- 6.77 Every plumbing fixture directly connected to the drainage system, according to the Code, shall:
- 6.78 According to Code, when notching the ends of floor joists to install water piping, the depth of the notches shall not exceed \_\_\_\_\_ of the depth of the joists.
- 6.79 The Code requires that sewage or other waste from a plumbing system be \_\_\_\_\_ before it is discharged into any waterway.
- 6.80 A single-family house, connected to a public sewer, may discharge all but one of the following substances through its drainage system without violating the Code:
- 6.81 All buildings intended for human habitation, according to Code, must:
- 6.82 A plumber requests an inspection and the work fails the test. According to Code, the plumber:
- 6.83 In lieu of the water test, the Code will accept one of the following for a final test of a completed plumbing system:
- 6.84 The plumber decides to water-test the drainage system in its entirety. According to Code, before inspection starts, the water must be kept in the system for a minimum of \_\_\_\_\_ minutes.
- 6.85 Plumbing fixtures, according to Code, cannot be located in such a manner:
- 6.87 The Code identifies water that is safe for drinking purposes as:
- 6.89 The purpose of a trap is to\_\_\_\_\_.
- 6.91 Every fixture in a unit shall have its own \_\_\_\_\_.
- 6.92 According to Code, traps for floor drains must be so constructed as to:
- 6.93 According to the Code, the drainage system is sized by:
- 6.94 A gallon of water weighs approximately \_\_\_\_\_:

6.95 Identify the following items as shown in the illustration. (1/2 point per answer.)

### **Module 7: Heating and Air Conditioning**

- 7.01 \_\_\_ A small amount of gas odor is acceptable in a utility room with gas appliances
- 7.02 \_\_\_ The flame of a pilot light should be mostly blue with very little red or orange
- 7.03 \_\_\_ Soapy water around joints and fittings is a good way to find a gas leak
- 7.04 \_\_\_ Copper, galvanized, and black pipe are all acceptable for carrying natural gas
- 7.05 \_\_\_ Installing an exterior storm window is usually more cost effective than repairing the primary window and frame to be airtight.
- 7.06 \_\_\_ When installing blown insulation into a wall or attic, it is not necessary to install a vapor barrier.
- 7.07 \_\_\_ Caulking and sealing the exterior of a building is more cost effective from an energy saving standpoint than caulking and sealing the interior.
- 7.08 \_\_\_ Replacing an inoperable appliance is an acceptable rehab activity.
- 7.09 \_\_\_ Replacing an old, inefficient appliance is an acceptable rehab activity
- 7.10 Air leaks and condensation on existing galvanized HVAC ducts can most effectively be treated by:
- 7.11 The purpose of a blower door is to:
- 7.12 When installing blown-in insulation to an existing exterior wall, the greatest long-term risk is:
- 7.13 All gas appliances for operation require:
- 7.14 Homeowners should be counseled to change their furnace filter:
- 7.15 Moisture in building materials tends to travel from:
- 7.16 The most energy efficient heating source of the following listed is:
- 7.17 Heat travels through a solid by:
- 7.18 Heat travels through air by:
- 7.19 The temperature at which gaseous moisture condenses into a liquid form is called:
- 7.20 What do the initials BTU stand for?

- 7.21 The paper side of floor insulation should be installed:
- 7.22 An R-Value is best defined as follows:
- 7.23 If carbon monoxide is detected in a home you should:
- 7.24. Carbon Monoxide production is limited to:
- 7.25 Which one of the following devices does not control an oil burner?
- 7.26 Which of the following is not an advantage of a hot-water heating system?
- 7.27 The fuel cost of electric resistance heating is roughly:
- 7.28 If an underground oil storage tank is no longer in use it should be:
- 7.29 Radon is:
- 7.30 A radon reduction system might consist of:
- 7.31 Which of the following is the least combustible?
- 7.32 In which of the following scenarios would the BTU rating of an appliance be useful:
- 7.33 When budgeting for insulation in a rehabilitation job, all other factors being equal, the order of priority for application should be:
- 7.34 The cost of electricity supplied by government-owned water-powered plants is usually:
- 7.35 The net free area of return air ducts must be equal to approximately \_\_\_\_ of the net free area of the distribution ducts.
- 7.36 If a heat exchanger is cracked, there is potential hazard of:
- 7.37 When checking the sizing of a heating unit it is best to:
- 7.38 The properly-sized furnace for a well-insulated, rehabilitated 1000 sq. ft. unit is:
- 7.39 What is the optimum indoor relative humidity level?
- 7.40 The recommended maximum duct leakage is:
- 7.41 The industry standard for air conditioner efficiency is called the:
- 7.42 What is the preferred method of sealing ducts?
- 7.43 A heat pump is efficient in climates in which the winter temperature does not fall below:

- 7.44 Which of the following lists starts with the lowest cost source and going to the most expensive?
- 7.45 On the average, the cost of heating fuel oil is relatively:
- 7.46 What does LPG stand for?
- 7.47 Radon gas levels in buildings are usually higher in which of the following seasons?
- 7.48 The recommended infiltration level for a house is:
- 7.49 What are the standard units of energy-efficiency in windows:
- 7.50 HVAC units should be sized in accordance with the following:
- 7.51 Duct systems for central HVAC systems should be designed in accordance with:
- 7.52 Framing lumber is subject to rot when its moisture content reaches about:
- 7.53 Excessive plenum temperature may be caused by which of the following?
- 7.54 You are examining a furnace that is on a 15 amp circuit, if that unit is wired properly it should be wired with:
- 7.55 A limit control unit on a modern boiler will operate at a setting of:
- 7.56 In a steam boiler system the following is required by the boiler code:
- 7.57 Buried fuel oil tanks are:
- 7.58 In a gas burning furnace system the following is not a safety controlling device:
- 7.59 A B-Valve serves the following purpose:
- 7.60 The life expectancy of a heat pump is:
- 7.61 The approximate life expectancy of an oil- or gas-fueled forced-air furnace is:
- 7.62 In an electric furnace your sail switch is malfunctioning, therefore:
- 7.63 An electric boiler with a BTU rating of 102,000 should be used:
- 7.64 If a home has a history of bio-contamination, which of the following repairs would not be considered a remedy?
- 7.65 A telltale sign of excess CO production in a gas fired unit is:
- 7.66 The average life span for a steel underground storage tank is:

- 7.67 The EPA's recommended maximum level of radon is:
- 7.68 All oil and gas lines using copper or aluminum tubing must use the following type of fittings:
- 7.69 An oil tank must be at least the following distance from a furnace:
- 7.70 When inspecting an oil burning heating system the following observations were made, which would be considered hazardous or improper?
- 7.71 A dirt leg is:
- 7.72 The term "BTU" refers to:
- 7.73 An exterior installation of a gas package unit shall be installed above grade on a solid base or an approved composite material base with a minimum thickness of:
- 7.74 Fuel-burning equipment and appliances having an ignition source located in a hazardous location such as an attached garage shall be elevated onto a stable platform or base so that the source of ignition is not less than \_\_\_ inches above the floor surface on which the equipment/appliance sits.
- 7.75 For a gas furnace installed in a crawlspace, with 6' sections of black iron supply pipes supported by floor joists, the pipes shall be supported at a minimum of every \_\_\_\_\_ feet with approved supports that will not promote galvanic action.
- 7.76 What is the minimum amount of clearance that a furnace must maintain above the grade of the crawlspace floor when the furnace is installed in a crawlspace?
- 7.77 Holes bored in joists shall not be within \_\_\_ inches of the top or bottom of the joist and the hole diameter shall not exceed \_\_\_\_\_ the depth of the member.
- 7.78 For a crawlspace furnace installation where the blower motor and fan assembly box measures 20" X 24", what would be the minimum clear access opening of the crawlspace door?
- 7.79 What is the maximum overall length allowed for a gas hot water heater fuel connector made of semi-rigid stainless steel tubing?
- 7.80 The pressure difference created in a vent or chimney because of its height, and the temperature difference between the flue gases and the outside atmosphere is known as:
- 7.81 Condensate piping shall maintain a minimum horizontal slope in the direction of discharge of not less than:
- 7.82 Metal ducts shall be supported with approved hangers at intervals not to exceed:

## **Module 8: Electrical**

- 8.01. Fuses in a panel box appear:
- 8.02 Recommended height from floor of electric wall outlets under Universal Design standards is:
- 8.03 The measurement of the amount of electrical current in a circuit at any moment is known as?
- 8.04 Two or more insulated wires wrapped in protective metal sheathing is known as?
- 8.05 The unit that steps up the voltage in a fluorescent lamp is?
- 8.06 A set of rules governing safe wiring methods drafted by the National Fire Protection Association is known as?
- 8.07 When testing whether a circuit is simply capable of carrying electricity, one would use the following testing device?
- 8.08 A GFCI performs the following function?
- 8.09 The measuring unit of electrical consumption is known as?
- 8.10 The independent organization that tests electrical components and fixtures for safety hazards is known as?
- 8.11 If the main supply lines outside of the structure are damaged or are suspected as the cause of electrical supply malfunction, the following course of action would be the most reasonable?
- 8.12 To test a cartridge fuse you would use which of the following test device
- 8.13 The point at which electrical service enters the building is known as the following?
- 8.14 A non-shielded plastic-insulated cable, formally named "NM", is commonly known by the brand name \_\_\_\_\_.
- 8.15 The condition that exists when a circuit is carrying more amperage than it was designed to carry is?
- 8.16 The following configuration of wiring of a receptacle is proper when it is included in a grounded circuit.
- 8.17 The system ground may be attached to which of the following:
- 8.18 Which of the following statements about grounding a circuit are true?
- 8.19 The following equation is true when calculating electrical pressure?

- 8.20 Which one of the following statements is not true about 240-volt electrical service?
- 8.21 If a circuit keeps "blowing" a fuse, the following actions are acceptable?
- 8.22 The total circuit load for a circuit containing the following items is closest to:  
Refrigerator -500 watts  
Toaster - 1050 watts  
Microwave - 800 watts  
Six (6) 100 watt light bulbs
- 8.23 The following is true about wire size and its ability to carry electricity?
- 8.24 When using electrical test devices, power should be turned on except when using:
- 8.25 If a hallway has three entrances and you wish to switch a light on and off at each entrance, which type is necessary?
- 8.27 Nonmetallic-sheathed cables shall be supported within \_\_\_\_\_ inches of a nonmetallic outlet box without cable clamps.
- 8.28 Constructed, protected, or treated so as to prevent rain from interfering with the successful operation of the apparatus under specified test conditions.
- 8.29 Which of the following locations of a receptacle do not need ground-fault circuit-interrupter protection?
- 8.30 Floor receptacles can be counted as part of required number of receptacles if
- 8.31 A receptacle mounted on a counter shall not be mounted
- 8.33 What information is not required to appear on an electrical permit
- 8.34 What is an electrical system component used to protect circuit conductors from overload?
- 8.35 The entity that licenses and regulates electrical contractors in NC is...
- 8.36 At your first homeowner interview, prior to your initial inspection, you ask the client, Mrs. Grundy, if she has noticed any problems with her electrical system. She says no, except that once in a while when she uses the microwave oven it blows a fuse. Usually she can use the microwave without a problem, but once, she says, when it did happen she had no spare fuses on hand, and her ice cream melted before she could get to the store and back. Your most logical preliminary diagnosis is:

### **Module 9: Lead-Based Paint**

- 9.01 Lead-based paint was banned from use in housing as of what year?
- 9.02 In a home suspected to contain LBP, which of the following areas is most likely to be a hazard?

- 9.03 Which of the following is a common cause of deteriorated paint?
- 9.04 Which of the following describes the most effective measure to protect occupants during rehabilitation work?
- 9.05 If residents are to remain in the home, which of the following protection measures is least effective?
- 9.06 What information should be provided by the contractor to occupants?
- 9.07 Which is the safest of the following methods for removing lead-based paint?
- 9.08 Workers should do which of the following when disposing of a window casing that may contain LBP?
- 9.09 How often should you inspect that work is being done in a lead-safe manner?
- 9.10 Which of the following best describes an item that you should look for?
- 9.11 Which of the following is not a restricted work practice?
- 9.12 Which of the following lists best describes tools needed for lead safety:
- 9.13 What should be done during proper setup for LBP work?
- 9.14 To limit the spread of lead dust, paint chips, and debris, when/how often should a contractor cleanup?
- 9.15 Which one of the following choices describes the most essential tool(s) for cleanup?
- 9.16 A clearance inspection consists of:
- 9.17 Which of the following persons can conduct a clearance inspection in North Carolina?
- 9.18 Who is qualified to conduct a paint inspection (for LBP)?
- 9.19 Who is qualified to conduct a risk assessment?
- 9.20 What information is provided by a paint inspection?
- 9.21 What information is provided by a risk assessment?
- 9.22 EBL is the acronym for:
- 9.23 Lead in paint can be detected with:
- 9.24 Asbestos was commonly used in several different building products from the turn of the century until as recently as:

- 9.25 In the following list of ACMs this item is considered the least hazardous:
- 9.26 According to federal law any product containing this percentage or greater is considered a regulated ACM:
- 9.27. The EPA and state health agencies may regulate the removal of ACMs based on:
- 9.28 Asbestos containing materials are considered most hazardous when they are:
- 9.30 If the HUD-funded rehabilitation hard cost totaled \$29,500 and the soft cost totaled \$2,200, with an additional \$4,600 charged as lead-related cost, what would be the minimum level of lead hazard reduction as required by 24CFR35.930?
- 9.31 In the state of North Carolina, which of the following lead hazard evaluation methods are permitted?
- 9.32 If a rehab specialist allocates the cost of replacing five windows to “lead hazard reduction” and the activity in question is an abatement method used to reduce the lead hazard reduction level of the unit to interim controls, what level of worker certification is required to replace the five windows?
- 9.33 Which of the following, when attributable to lead-based paint hazard reduction, can be excluded when calculating the hard costs of rehabilitation in order to get below the abatement level of \$25,000?
- 9.34 “Safe work practices” are not required if the area to be repaired falls under the HUD De minimis level.
- 9.35 The De minimis levels for exterior surface area, interior surface area and components, respectively, are:
- 9.36 In North Carolina, lead inspectors and risk assessors are certified by:

**Module 10: Structural and Environmental** *(Applied Building Science)*

- 10.01 Prioritize the following list of measures to control exterior water entering a basement or crawlspace (do not include those that would not be used at any time):
- 10.02 Recommended height from floor of electric wall outlets for persons who are physically challenged is:
- 10.03 For a person with decreased manual dexterity, the best option for door knobs is:
- 10.04 Minimum clear doorway width needed for an adult sized wheelchair is:
- 10.05 Green colored sheet rock is predominately for:
- 10.06 Step flashing is:

- 10.07 The first place to look for the cause of water in a basement is:
- 10.08 When placing lumber against masonry:
- 10.09 Pressure-treated lumber is certified for use:
- 10.10 Windows in a bathroom must be:
- 10.11 The best time to check the general condition of an asphalt shingled roof is:
- 10.12 The best choice for roof flashing material is:
- 10.13 You should consider replacing an asphalt shingled roof if:
- 10.14 The most common method of unclogging a downspout is
- 10.15 Downspouts and their splash blocks should project at least
- 10.16 If dry rot is detected throughout a structure one should call the following service:
- 10.17 Termites are more likely to be found in areas that are:
- 10.18 Mud tubes are detected on a pier under a house, the following would be the most logical and efficient action:
- 10.19 Composition shingles are made up of all but which of the following materials
- 10.20 When installing vinyl siding which of the following joints should be caulked
- 10.21 Which of the following types of windows are the least problematic and maintenance free
- 10.22 The actual size of a 2 X 4 is
- 10.23 On a roof with a 1/4 pitch that has a 6 foot rise, the run would be:
- 10.24 The following building materials are common sources of VOCs, except:
- 10.25 Which of the following products contains the highest amount of VOCs?
- 10.26 Indoor air pollution and the off-gassing of VOCs are the highest in:
- 10.27 To protect against termites wood foundation sills should be at least
- 10.28 Match the following items with the appropriate letter from Figure 10.2:
- A. \_\_\_ jamb
  - B. \_\_\_ interior casing
  - C. \_\_\_ stop
  - D. \_\_\_ stool

- E. \_\_\_ mullion
- F. \_\_\_ glazing
- G. \_\_\_ sash
- H. \_\_\_ sill

- 10.29 The lowest board/panel of a wood siding should be installed at least:
- 10.30 Which of the following is not a function of a float on a sump pump?
- 10.31. What is the actual size of a pressure-treated 1 x 6?
- 10.32 What is the standard width of a composition shingle?
- 10.33 What is an ice dam?
- 10.34 When applying expandable aerosol foam insulation around windows and doors, one should be primarily concerned with which of the following?
- 10.35 What's the common name for paint with limited off-gassing properties
- 10.36 The gable roof you are inspecting is covered with asphalt shingles that are exposed 5 inches to the weather, from this fact and simple observation you should be able to determine the following.
- 10.37 The house that you are inspecting has 8-inch vinyl siding on all of its exterior wall surfaces, on each surface there are only whole 8-inch panels installed. From this information and a simple visual inspection you should be able to determine the following.
- 10.38 Small accumulations of sawdust are appearing on the ground below a roof overhang. From this observation you surmise that the most likely cause is:
- 10.39 The top of foundation footings must be (check all correct answers):
- 10.40 Guardrails are required whenever a porch is \_\_\_ above grade?
- 10.41 When selecting the proper length screws to attach an item, one should use a screw that is how long
- 10.42 A platform frame is easy to erect because
- 10.43 One of the biggest advantages of balloon framing is
- 10.44 Of the following drywall thickness, which would be the most appropriate when installing directly over a deteriorated plaster wall
- 10.45 When a column supports a girder, what does the column rest on?
- 10.46 The frost line:

- 10.47 Which of the mixtures would be appropriate for use in pouring piers?
- 10.48 Gutters should slope a minimum of 1 inch for every:
- 10.49 Proper grading from a house should fall at least the following amount:
- 10.50 The floor in the 14x14 living room over a crawlspace is very bouncy, sagging in the middle, and feels weak, though there are no rotted or broken boards. Further inspection reveals 2x6 floor joists, 24" O.C. Your specification is:
- 10.51 Asphalt shingles commonly have a life span of :
- 10.52 Roof flashing should be replaced if holes in the material are greater than:
- 10.53 When addressing a sagging floor, which of the following would be the most effective and efficient methods of repair?
- 10.54 What is the lowest recommended temperature for the application of exterior latex paint?
- 10.55 What is the lowest recommended temperature for the application of mortar?
- 10.56 If you are laying or forming concrete and the temperature is dropping below 32°F:
- 10.57 What is the lowest recommended temperature for the application of acrylic latex caulk?
- 10.58 Which of the following types of caulking are not paintable
- 10.59 Which of the following types of caulking has the highest adhesive properties and is the most flexible?
- 10.60 If condensation is persistently present on the interior side of a storm window protecting a wooden double-hung window, the following condition may occur:
- 10.61 Upon inspection you discover that drywall beneath the tile in a bathtub enclosure is water damaged, which of the following would be the most effective and economical procedure in repairing this condition after removal all tile and drywall to bare studs
- 10.65 Wood siding if installed and maintained properly, has a life expectancy of at least
- 10.66 Manufactured siding such as aluminum, vinyl or composite should last at least
- 10.67 Alligatoring or checking paint is a condition that occurs when
- 10.68 Blistering paint occurs when
- 10.69 Re-pointed mortar joints should be left to cure for at least
- 10.70 Which one of the following types of caulking is the least flexible

- 10.71 If a double hung window refuses to stay open the problem lies in
- 10.72 If a double window sash is difficult to open organize the following list of remedies in order of efficiency and affordability
- 10.73 If there is a problem with a sagging door list the following remedies in order of cost and labor efficiency
- 10.74 Lumber grading rules are established by:
- 10.75 When specifying lumber for light construction, which one of the following grades of lumber would not be acceptable by most building codes
- 10.76 Which of the following list of plywood grades is in order of descending quality
- 10.77 The minimum grade permitted for exterior plywood is:
- 10.78 If engineered plywood has a stamp that reads 24/16, this means:
- 10.79 Footing dimensions can be calculated by the following formula:
- 10.80 When supporting a load bearing wall the floor joists should be:
- 10.81 It is best to use a center girder and run joists to the center from both sides when a building is wider than:
- 10.82 The last board in your sole plate construction should be no shorter than:
- 10.83 When using standard studs, the final height of a wall including the sole plate, the top plate and the cap plate is:
- 10.84 In platform construction, corner post must be:
- 10.85 A rough window opening should be constructed:
- 10.86 If the standard height for window and door headers is 81.5 inches from the sub-floor, your jack/trimmer studs should be:
- 10.87 If your rough opening for a window is 30 inches, your header length would have to be:
- 10.88 If you construct a header out of two 2x10s, the maximum span of a window opening would be:
- 10.89 In a rough window opening, a double sill is usually required for window openings that are greater than:
- 10.90 If stair treads measure 10 inches wide and the risers measure 7 inches tall how would you describe its safety and comfort of use?

- 10.91 The angle of a stairway stringer should ideally be between:
- 10.92 When installing sub-floor sheathing how does one know which side is to be installed up or down?
- 10.93. To avoid a sticking window, avoid excess paint on (choose the best answer):
- 10.94 If a window cannot stay open under its own devices which designated point would be the most appropriate component to address (choose the best answer)
- 10.95 If a window has been covered by a storm window with a severe condensation problem this component quite often suffers from water damage and has to be replaced (choose the best answer)
- 10.96 If this window is to be fitted with vinyl replacement inserts, which items can be removed and discarded (chosed the best answer)
- 10.100 What fastening method should be employed when installing drywall over an existing plaster surface?
- 10.101 A wooden floor has one panel that is damaged , which of the following would be the most effective and efficient approach to removing the damage in respect to facilitating the repair
- 10.102 Rotted wood is detected in the soffit and fascia of a structure, which of the following would be the most effective and efficient procedure in repairing this condition.
- 10.103 Upon inspection a gap is detected between a gutter and the edge of shingled roof system, which of the following would be the most effective and efficient procedure in repairing this condition.
- 10.104 Upon inspection it is observed that a gutter is persistently filled with standing water, which of the following would be the most effective and efficient procedure in repairing this condition
- 10.105 Upon inspection, rotted, water damaged roof sheathing is discovered, which of the following would be the most effective and efficient procedure in repairing this condition
- 10.106 Upon inspection of a basement, even though it has not rained in several days, you observe standing water on the basement floor. Upon further inspection you find that there are no leaks in the plumbing system, the problem lies in the structure of the basement itself, which of the following would be the most effective and efficient procedure in repairing this condition
- 10.107 Upon inspection you discover that a drywall ceiling is sagging from water damage, after locating the leak and repairing, which of the following would be the most effective and efficient in repairing this condition.

- 10.108 Upon inspection you find that a section on a wall is mildewed and soft to the touch, which of the following would be the most effective and efficient procedure in repairing this condition
- 10.109 Upon inspection you discover peeling paint from a bathroom ceiling due to excessive condensation, which of the following would be the most effective and efficient procedure in repairing this condition
- 10.110 Upon inspection you find that several panels of a standing seam tin roof system are rusted, which of the following would be the most efficient procedure in repairing this condition
- 10.111 Upon inspection you find that only the sill of a window is wet and deteriorated, which of the following would be the most effective and efficient procedure in repairing this condition
- 10.112 Upon inspection you find that panes of glass are loose in the sash of a wooden double hung window, which of the following would be the most effective and efficient procedure in repairing this condition
- 10.113 Upon inspection you discover that a sashes in a double hung wooden window are loose in their frames and do not perform several of their other functions properly, which of the following would be the most effective and efficient procedure in repairing this condition
- 10.114 Counter flashing is when:
- 10.115 Termite treatment is done with:
- 10.116 Hydrostatic pressure is likely to occur when:
- 10.117 Dry rot is best described as follows
- 10.119 Which of the following conditions would most accelerate the off-gassing of VOCs?
- 10.120 The subterranean termite is accountable for 95 percent of all termite damage in the US, it is found throughout the US in every area where the average annual temperature is:
- 10.121 What is the actual thickness of “5/8 inch OSB sheathing”
- 10.122 At least one exterior hinged door must be:
- 10.123 Which one of the following terms is not a style of milled lumber for siding
- 10.124 Which type of framing requires fire stops
- 10.125 4-PC is a well known VOC that is found in
- 10.127 Next to each description, write the letter corresponding to the best match from the list at right:  
*(Note: 1/4 point per correct answer)*

- \_\_\_ Measured in picocuries per liter
- \_\_\_ Wipe test measures  $\mu\text{g}/\text{SF}$
- \_\_\_ Potential hazard to digestive system primarily
- \_\_\_ A poisonous byproduct of combustion
- \_\_\_ Second-leading cause of lung cancer in U.S.
- \_\_\_ Blood levels measured in micrograms per deciliter
- \_\_\_ Used in house paints prior to 1978
- \_\_\_ A hazard affecting well and septic system placement
- \_\_\_ Flexible crystalline fibers
- \_\_\_ Has been used in mini-blinds
- \_\_\_ Is to plants as oxygen is to animals
- \_\_\_ A colorless, odorless, nonirritating gas that can kill within hours
- \_\_\_ Hazard in indoor air measured in parts per million
- \_\_\_ Causes scarring of lungs
- \_\_\_ Most dangerous to the brains of children under 6
- \_\_\_ Found in products classified as ACMs
- \_\_\_ Hundreds of strains; most are harmless
- \_\_\_ A danger when pressure imbalances meet combustion appliances
- \_\_\_ The No. 1 threat to the structural integrity of wood-frame houses
- \_\_\_ Breathing it causes about 1500 deaths per year in U.S.
- \_\_\_ Most dangerous when friable
- \_\_\_ Escherichia, to spell it out
- \_\_\_ Often associated with granite bedrock
- \_\_\_ Unvented gas heaters release nearly a gallon per gallon of fuel burned
- \_\_\_ Responsible for almost all drowning deaths
- \_\_\_ A biological hazard
- \_\_\_ Byproduct of the decay of uranium
- \_\_\_ A so-called greenhouse gas

10.128 Which of the following is not a type of gas water heater?

10.129 A “sone” is a measurement of:

10.130 The property of a building component to let air pass through when air pressure on one side is higher is:

10.131 The ability of a building component to transmit water vapor (measured in perms) is:

10.132 Which of the following best defines “relative humidity”?

10.133 The flow of liquid moisture without pressure or gravity, through small interconnected pores or spaces due to adhesion and surface tension is called:

10.134 Infiltration and ventilation in dwellings is conventionally believed to account for 1/3 to 1/2 the cost of heating and cooling. The minimum number of air changes per hour (ACH) established by ASHRAE standard 62 is \_\_\_\_\_, while the average for older homes is close to \_\_\_\_\_.

10.135 Moisture in building materials tends to travel from:

10.136 Heat travels through a solid by:

10.137 Heat travels through air by:

10.138 The temperature at which gaseous moisture condenses into a liquid form is called:

10.139 In North Carolina, the paper side of floor insulation should be installed:

10.140 An R-Value is best defined as follows:

10.142 What are standard measures of energy-efficiency in windows (per National Fenestration Rating Council):