2016 UDC Update Quiz Part 1 of 2

Instructions

1. Print these pages. Fee $ 25
2. Answer the Simple questions that follow the mini sections of the code language.
3. Circle the correct answers and transfer the answers to the answer sheets (see last pages).
4. After answering the simple questions you will become familiar with the new code changes.
5. Page down to the last page for the verification form, answer sheets and mailing instructions.

3 course hours for: Course # 17726

1. Dwelling Contractor Qualifier Certification.
2. UDC Construction Inspector.

Live support at 920-381-6714 or tmklinka@hotmail.com

TEXT OF RULE

SECTION 1. SPS 320.02 (1) (ce) and (ce) (note), (cm) and (cm) note, and (cs) and (cs) (note) are created to read:

SPS 320.02 (1) (ce) A one- or 2-family dwelling built on or after the effective dates under s. SPS 320.03 that is used as a foster home or group home, or as a residential care center for children and youth that has a capacity for 8 or fewer children, all as defined in s. 48.02, Stats. Where such a home or center is operated in each dwelling unit of a 2-family dwelling, the capacity limit for each unit is independent of the other unit only if the two operations are independent of each other.

Note: The definitions in s. 48.02 of the Statutes limit foster homes to no more than 4 children unless the children are siblings, and limit group homes to no more than 8 children. Where permitted by the Department of Children and Families, a group home or a residential care center for children and youth that has a capacity for 8 or fewer children may be located in a one- or 2-family dwelling as a community living arrangement, as defined in s. 46.03 (22) of the Statutes.

(cm) A one- or 2-family dwelling built on or after the effective dates under s. SPS 320.03, in which a public or private day care center for 8 or fewer children is located. Where such a day care center is operated in each dwelling unit of a 2-family dwelling, the capacity limit for each unit is independent of the other unit only if the two operations are independent of each other.

Note: Chapter DCF 250, as administered by the Department of Children and Families, defines a "family child care center" as being "a facility where a person provides care and supervision for less than 24 hours a day for at least 4 and not more than 8 children who are not related to the provider." Chapter DCF250 applies various licensing and other requirements to these centers, including for fire protection and other aspects of the physical plant.

(cs) 1. Any portion of or space within a one- or 2-family dwelling built on or after the effective dates under s. SPS 320.03, in which a home occupation is located.

2. In this paragraph, "home occupation" means any business, profession, trade, or employment conducted in a person's dwelling unit, that may involve the person's immediate family or household and a maximum of one other unrelated person, but does not involve any of the following:

a. Explosives, fireworks, or repair of motor vehicles.

b. More than 25% of the habitable floor area of the dwelling unit.

Note: See chs. SPS 361 to 366 for buildings that are beyond the scope of this code.

1. “Home occupation” means any business, profession, trade, or employment conducted in a person’s dwelling unit, that may involve the _____.
   a. person’s immediate family
   b. person’s immediate household
   c. maximum of one other unrelated person
   d. all of the above
2. “Home occupation” means any business, profession, trade, or employment conducted in a person’s dwelling unit, that shall not involve _____.
   a. Explosives, fireworks, or repair of motor vehicles.
   b. More than 25% of the habitable floor area of the dwelling unit.
   c. both a & b
   d. none of the above
3. A one- or 2-family dwelling built on or after the effective dates under s. SPS 320.03, in which a public or private day care center for ___ or fewer children is located.
   a. 4
   b. 5
   c. 6
   d. 8
4. Where such a day care center is operated in each dwelling unit of a 2-family dwelling, the capacity limit for each unit is independent of the other unit only if the two operations are _____of each other.
   a. inclusive
   b. self-governing
   c. independent
   d. none of the above
5. Chapter DCF 250, as administered by the Department of Children and Families, defines a “family child care center” as being “a facility where a person provides care and supervision for less than __ hours a day.
   a. 20
   b. 12
   c. 8
   d. 24
6. Chapter DCF 250, as administered by the Department of Children and Families, defines a “family child care center” as being “a facility where a person provides care and supervision for at least _____ children who are not related to the provider.”
   a. 6 and not more than 8
   b. 4 and not more than 6
   c. 3 and not more than 9
   d. 4 and not more than 8
7. Where permitted by the Department of Children and Families, a group home or a residential care center for children and youth that has a capacity for 8 or fewer children may be located in a ____family dwelling as a community living arrangement, as defined in s. 46.03 (22) of the Statutes.
   a. 1
   b. 2
   c. 1 or 2
   d. all of the above
8. The definitions in s. 48.02 of the Statutes limit foster homes to no more than __ children unless the children are siblings.
   a. 4
   b. 5
   c. 6

d. 8

9. The definitions in s. 48.02 of the Statutes limit foster homes to limit group homes to no more than ___ children.

a. 4
b. 5
c. 6
d. 8

10. Where a foster home or group home, or as a residential care center for children and youth is operated in each dwelling unit of a 2-family dwelling, the capacity limit for each unit ___independent of the other unit only if the two operations are independent of each other.

a. is not
b. could be
c. might be
d. is

SECTION 2. SPS 320.02 (5) is renumbered SPS 321.02 (4) and amended to read:

SPS 321.02 (4) ~~INNOVATIVE DWELLINGS~~ ALTERNATE MATERIALS AND STANDARDS. No part of this code is intended to prohibit or discourage use of alternate, equivalent materials or standards; or the construction of innovative dwellings such as a dwelling built below ground, a geodesic dome, a concrete house, a ~~fiber-glass~~ fiberglass house, or any other nonconventional structure.

SECTION 3. SPS 320.07 (34f) is amended to read: SPS 320.07 (34f) "Flight" means a continuous series of ~~steps~~, risers and treads, with no intermediate landings.

SECTION 4. SPS 320.07 (34m) is repealed.

SECTION 5. SPS 320.07 (36r) and (37m) are created to read:

SPS 320.07 (36r) "Guard" means a barrier erected to prevent a person from falling to a lower level.

(37m) "Handrail" means a horizontal or sloping rail intended for grasping by a hand, for guidance or support or preventing a fall down a stair.

SECTION 6. SPS 320.07 (47), (50), (62) (intro.), and (66) are amended to read:

SPS 320.07 (47) "Landing" means the level portion of a stairs located between flights of stairs or located at the top and ~~foot~~ base of a stairs.

(50) "Loft" means an upper room or floor which has at least 50% of the common wall open to the floor below. The opening may be infringed upon by an open ~~guardrail~~ guard constructed in compliance with s. SPS 321.04 (2), but not by a window or half-wall ~~guardrail~~ guard. All habitable rooms of lofts are open to the floor below.

(62) (intro.) "Shingle" means a unit of ~~roof covering~~ roof-covering material that has been manufactured to specific dimensions and is applied in overlapping fashion. "Shingle" includes all of the following:

(66) ~~A "stairway" is~~ "Stair," "stairs," or "stairway" means one or more ~~flights of~~ ~~steps,~~ risers and the necessary treads, ~~platforms and landings connecting them, to~~ which form a continuous passage from one elevation to another. Multiple stairways can be connected by platforms and landings.

11. No part of this code is intended to prohibit or discourage use of alternate, equivalent materials or standards; or the construction of innovative dwellings defines:
    a. Innovated dwelling
    b. alternative materials and standards
    c. both a & b
    d. none of the above
12. "Flight" means a continuous series of _____, with no intermediate landings.
    a. steps
    b. risers
    c. treads
    d. both b & c
13. "_____" means a barrier erected to prevent a person from falling to a lower level.
    a. Spindle
    b. Guard
    c. Handrail
    d. Landing
14. "_____" means a horizontal or sloping rail intended for grasping by a hand, for guidance or support or preventing a fall down a stair.
    a. Spindle
    b. Guard
    c. Handrail
    d. Landing
15. "_____" means the level portion of a stairs located between flights of stairs or located at the top and foot base of a stairs.
    a. Spindle
    b. Guard
    c. Handrail
    d. Landing
16. "Shingle" means a unit of roof-covering material that has been manufactured to specific dimensions and is applied in _____ fashion.
    a. layering
    b. overlapping
    c. intersecting
    d. none of the above
17."_____" means one or more risers and the necessary treads, which form a continuous passage from one elevation to another. Multiple stairways can be connected by platforms and landings.
    a. Stair
    b. stairs
    c. stairway
    d. all of the above

SECTION 7. SPS 320.07 (67) and (67m) are repealed.

SECTION 8. SPS 320.085 is repealed.

SECTION 9. SPS 320.09 (5) (b) 2. d. is amended to read:

SPS 320.09 (5) (b) 2. d. The location and construction details of wall bracing on each building side and floor level. The details may consist of the Wall Bracing Compliance Worksheet or a legend showing

which wall bracing method is used and the lengths or number of braced wall panels – and demarcation of the circumscribed rectangles if more than one is used.

SECTION 10. SPS 320.09 (5) (d) is repealed.

SECTION 11. SPS 320.09 (6) (d) is amended to read:

SPS 320.09 (6) (d) The name of the initial downstream receiving water of the state from the dwelling shall be identified, regarding erosion and sediment control ~~and storm water management~~.

18. The location and construction details of wall bracing on each _____.
    a. building side
    b. floor level
    c. concrete basement
    d. both a & b
19. The details may consist of the _____showing which wall bracing method is used and the lengths or number of braced wall panels.
    a. Wall Bracing Compliance Worksheet
    b. legend
    c. field notes
    d. both a & b
20. The name of the initial downstream receiving water of the state from the dwelling shall be identified, regarding _____.
    a. erosion
    b. sediment control
    c. storm water management
    d. both a & b

SECTION 12. SPS 320.24 (1), (2), and (2) (Note) are amended to read:

SPS 320.24 (1) CONSENT. Pursuant to s. 227.21 (2), Stats., the attorney general has consented to the incorporation by reference of the standards listed in Tables 320.24-1 to ~~320.14-13~~ 320.24-13.

(2) ADOPTION OF STANDARDS. The standards referenced in Tables 320.24-1 to ~~320.14-13~~ 320.24-13 are incorporated by reference into this chapter.

Note: Copies of the adopted standards are on file in the offices of the department and the legislative reference bureau. Copies of the standards may be purchased, or are available for free, through the respective organizations or other information listed in Tables 320.24-1 to ~~320.14-13~~ 320.24-13.

SECTION 13. SPS 320.24 (2) Table 320.24–1 is amended to read:

SPS 320.24 (2) Table 320.24–1

ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333 www.concrete.org
Standard Reference Number	**Title**
1. ~~318-05~~ 318-14	Building Code Requirements for Structural Concrete
2. 332-14	Residential Code Requirements for Structural Concrete
~~23~~. ~~530-05~~ 530-13	Building Code Requirements for Masonry Structures
~~34~~. ~~530.1-05~~ 530.1-13	Specification for Masonry Structures

SECTION 14. SPS 320.24 (2) Table 320.24–2 is renumbered SPS 320.24 (2) Table 320.24–6m and amended to read:

SPS 320.24 (2) Table 320.24-6m

~~AF&PA~~ AWC	American ~~Forest & Paper Association~~ Wood Council ~~1111 19th Street, N.W., Suite 800~~
	~~Washington, D.C. 20036~~ 222 Catoctin Circle SE Suite 201 Leesburg, VA 20175 www.americanwoodcouncil.org
Standard Reference Number	**Title**
1. ~~NDS 2005~~ ANSI/AWC NDS-2012	National Design Specification For Wood Construction ~~Including 2005 Supplement~~
2. ~~ANSI/AF&PA~~ ANSI/AWC PWF - 2007	Permanent Wood Foundation Design Specification

SECTION 15. SPS 320.24 (2) Tables 320.24–3, 320.24–4, 320.24-5 (heading), 320.24-6, and 320.24-7 are amended to read:

SPS 320.24 (2) Table 320.24-3

AISC	American Institute of Steel Construction One ~~E.~~ East Wacker Drive, Suite ~~3100~~ 700 Chicago, IL 60601 www.aisc.org
Standard Reference Number	**Title**
~~1. 360-05~~ ANSI/AISC 360-10	Specification for Structural Steel Buildings

Table 320.24-4

ASTM	~~American Society for Testing and Materials~~ ASTM International ~~1916 Race Street~~ ~~Philadelphia,~~ 100 Barr Harbor Drive PO Box C700 West Conshohocken, PA ~~19103~~ 19428-2959 www.astm.org
Standard Reference Number	**Title**
1. ~~C 62-01~~ C62-13a	Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale)
2. ~~C 90-02~~ C90-14	Standard Specification for ~~Hollow Load-Bearing~~ Loadbearing Concrete Masonry Units
3. ~~C 216-02~~ C216-14	Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale)
4. ~~C 270-01a~~ C270-14	Standard Specification for Mortar for Unit Masonry
5. ~~C 476-01~~ C476-10	Standard Specification for Grout for Masonry
6. ~~C 652-01a~~ C652-14	Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale)
~~7. D 225-01~~	~~Standard Specification for Asphalt Shingles (Organic Felt) Surfaced With Mineral Granules~~
~~8. D 226-97a~~ 7. D226-09	Standard Specification for Asphalt-Saturated Organic Felt Used In Roofing And Water Proofing
~~9. D 3462-02~~ 8. D3462-10a	Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced With Mineral Granules
~~10. D 4869-02~~ 9. D4869-05(2011)e1	Standard Specification for Asphalt-Saturated Organic Felt Shingle Underlayment Used in Roofing

Table 320.24-5 (heading)

ASCE	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 www.asce.org

Table 320.24-6

ASHRAE	American Society of Heating, Refrigerating, and Air-conditioning Engineers, Inc. 1791 Tullie Circle, N.E. Atlanta, GA 30329 www.ashrae.org
Standard Reference Number	**Title**
1. ~~2005~~ 2013 Fundamentals	ASHRAE Handbook~~,~~ – Fundamentals
2. ~~2003~~ 2011 HVAC Applications	ASHRAE Handbook – HVAC Applications ~~Handbook~~
3. ~~2004~~ 2012 HVAC Systems & Equipment	ASHRAE Handbook – HVAC Systems & Equipment ~~Handbook~~

Table 320.24-7

ICC	The International Code Council 500 New Jersey Avenue, NW, 6th Floor Washington, D.C. 20001 www.iccsafe.org
Standard Reference Number	**Title**
~~ICC/ANSI 400-2007~~ ICC 400-2012	Standard on the Design and Construction of Log Structures

SECTION 16. SPS 320.24 (2) Table 320.24–8 is repealed.

SECTION 17. SPS 320.24 (2) Tables 320.24–9 (heading) 320.24-10, 320.24-11 (heading) and 320.24–12 (heading) are amended to read:

SPS 320.24 (2) Table 320.24-9 (heading)

NAIMA	North American Insulation Manufacturers Association ~~44~~ 11 Canal Canter Plaza, Suite ~~310~~ 103 Alexandria, VA 22314 www.naima.org

Table 320.24-10

NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA 02269 www.nfpa.org
Standard Reference Number	**Title**
1. NFPA 13D ~~2002~~ 2013	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes
2. ~~ANSI Z223.1-2009/ NFPA 54-2009~~ NFPA 54/ANSI Z223.1 2015	National Fuel Gas Code

Table 320.24-11 (heading)

NIST	National Institute of Standards and Technology U.S. Department of Commerce Washington, D.C. 20234 http://catalog.hathitrust.org/Record/009487395

Table 320.24-12 (heading)

SMACNA	Sheet Metal and Air Conditioning ~~Contractors~~ Contractors' National Association 4201 Lafayette Center Drive Chantilly, VA ~~20151-1209~~ 20151-1219 www.smacna.org

SECTION 18. SPS 320.24 (2) Table 320.24-12 Row 3 is created to read:

SPS 320.24 (2) Table 320.24-12

(Partial Table)

Standard Reference Number	**Title**
3. Third Edition, 2005	HVAC Duct Construction Standards – Metal and Flexible

SECTION 19. SPS 320.24 (2) Table 320.24–13 is amended to read:

SPS 320.24 (2) Table 320.24-13

TPI	Truss Plate Institute, Inc. 218 North Lee Street, Suite 312 Alexandria, VA 22314 www.tpinst.org
Standard Reference Number	**Title**
~~1. TPI 1-2002~~ ANSI/TPI 1-2007	National Design Standard for Metal Plate Connected Wood Truss Construction

SECTION 20. SPS 321.02 (1) (b) 1. Table 321.02 is renumbered SPS 321.02 (1) (b) 1. Table 321.02-1.

SECTION 21. SPS 321.02 (1) (d) (title) is renumbered SPS 321.02 (3) (h) (title).

SECTION 22. SPS 321.02 (1) (d) and (Note) are renumbered SPS 321.02 (3) (h) 1.,and (Note), and amended to read:

SECTION 23. SPS 321.02 (3) (c) is amended to read:

SPS 321.02 (3) (c) *Structural steel.* The design, fabrication, and erection of structural steel for buildings shall conform to Specification for Structural Steel Buildings, ~~Allowable Stress Design and Plastic Design~~ and the provisions of the accompanying commentary as adopted under Table 320.24-3.

SECTION 24. SPS 321.02 (3) (d) 1. and 2. are amended to read:

SPS 321.02 (3) (d) 1. ACI Standard 318, "Building Code Requirements for ~~Reinforced~~ Structural Concrete".

2. ACI Standard ~~318.1~~ 332, ~~"Building~~ Residential Code Requirements for Structural ~~Plain~~ Concrete~~"~~.

SECTION 25. SPS 321.02 (3) (d) (Note) is created to read:

SPS 321.02 (3) (d) Note: Concrete construction in one- and two-family dwellings should meet the standards established in ACI 332. Construction means, materials, or methods not addressed in ACI 332 should meet the standards established in ACI 318.

SECTION 26. SPS 321.02 (3) (g) (intro.) and 2. are consolidated, renumbered SPS 321.02 (3) (g), and amended to read:

SPS 321.02 (3) (g) *Whole logs.* Dwellings constructed of whole logs shall conform to ~~the following standards: 2. ICC/ANSI~~ ICC 400, Standard on the Design and Construction of Log Structures.

SECTION 27. SPS 321.02 (3) (g) 1. is repealed.

SPS 321.02 (3) (h) 1. All building components shall be fastened to withstand the dead load, live load, snow load, and wind load.

Note: ~~See the Appendix for a schedule of fasteners that will be acceptable to the department for compliance with this subsection.~~ Other fastening methods may be allowed if engineered under s. SPS 321.02 (3).

21. Dwellings constructed of whole logs shall conform to _____.
    a. ICC/ANSI ICC 400
    b. Standard on the Design and Construction of Log Structures
    c. both a & b
    d. none of the above
22. All building components shall be fastened to withstand the _____.
    a. dead & live load
    b. snow load
    c. wind load
    d. all of the above
23. The design, fabrication, and erection of structural steel for buildings shall conform to _____.
    a. Specification for Structural Steel Buildings
    b. Allowable Stress Design and Plastic Design
    c. the provisions of the accompanying commentary as adopted under Table 320.24-3.
    d. both a & c

SECTION 27. SPS 321.02 (3) (g) 1. is repealed.

SECTION 28. SPS 321.02 (3) (h) 2. is created to read:

SPS 321.02 (3) (h) 2. Fasteners shall comply with the schedule listed in Table 321.02-2.

SECTION 29. SPS 321.02 (4) (Note) is created to read:

SPS 321.02 (4) Note: Examples of materials addressed by this subsection include structural insulated panels that are used in accordance with the manufacturer's instructions or structural analysis, and cold-formed steel framing complying with AISI S230 *Standard for Cold-Formed Steel Framing – Prescriptive Method for One and Two Family Dwellings.*

SECTION 30. SPS 321.03 (1) (b) (Note) is created to read:

SPS 321.03 (1) (b) Note: Under this paragraph, only one of the two exit doors that are addressed in par. (a) is required to exit directly to grade.

SECTION 31. SPS 321.03 (1) (c) and (d) are amended to read:

SPS 321.03 (1) (c) ~~An additional~~ Any exit that does not comply with par. (b) may discharge to an outside balcony that complies with sub. (8).

(d) ~~An additional~~ Any exit that does not comply with par. (b) may discharge into an attached garage provided the garage has an exit door that discharges to grade. An overhead garage door may not be used as an exit door.

SECTION 32. SPS 321.03 (1) (h) 3. is created to read:

SPS 321.03 (1) (h) 3. One of the exit doors required in par. (a) may be omitted for a dwelling unit that has one or more egress windows on the first floor. If there are bedrooms, each must have a window that complies with sub. (6).

24. Any exit that does not comply with par. (b) may discharge into an attached garage provided the garage has an _____ that discharges to grade.
    a. overhead garage door
    b. egress window
    c. exit door
    d. all of the above
25. An overhead garage door may be used as an exit door.
    a. true
    b. false
26. Any exit that does not comply with par. (b) may discharge to an outside _____that complies with sub. (8).
    a. balcony
    b. overhead garage door
    c. window
    d. none of the above

SECTION 33. SPS 321.03 (2) (a) to (c) and (6) (d) 5. and (e) 4. and 5. a. are amended to read:

SPS 321.03 (2) (a) At least 2 exits shall be provided from the second floor. ~~One~~ At least one of the exits shall be a stairway or ramp and lead to the first floor or discharge to grade. The second exit may be via a stairway or ramp ~~which~~ that discharges to grade, or ~~may discharge~~ to a balcony which complies with sub. (8), or to a deck that complies with s. SPS 321.225 and that is no more than 15 feet above the grade below.

(b) ~~Except as provided in par. (c), windows~~ Windows ~~which~~ that comply with sub. (6) may be provided in each second floor bedroom – or in another location on the second floor if there are no bedrooms on that floor – in lieu of the second exit from ~~the~~ that floor.

(c) Where the second floor of a building is the lowest floor level in a dwelling unit, as in an up-and-down duplex, ~~windows may not be provided as the second exit from the floor~~ no exit from the unit may go through another dwelling unit or other party's occupancy on the first floor.

(6) (d) 5. A ~~Step~~ stair used for the sole purpose of reaching the top of the platform or fixture is exempt from the requirements of s. SPS 321.04.

(e) 4. If the bottom of the areaway is more than 46 inches below adjacent grade or the top of the areaway enclosure, the areaway shall be provided with a ladder or ~~at least one additional step~~ stair to aid egress. ~~Steps~~ Stairs used to comply with this section are exempt from the requirements of s. SPS 321.04.

5. a. Ladders or other ~~steps~~ stairs used to comply with subd. 4. may infringe on the required area of the areaway by a maximum of 6 inches.

27. At least 2 exits shall be provided from the second floor. One At least one of the exits shall be a _____ and lead to the first floor or discharge to grade.
a. stairway
b. ramp
c. egress window
d. both a & b

28. The second exit may be via a stairway or ramp that discharges to grade, or to a balcony which complies with sub. (8), or to a deck that complies with s. SPS 321.225 and that is no more than ___ feet above the grade below.
a. 10
b. 15
c. 20
d. 25

29. Windows that comply with sub. (6) may be provided _____ second floor bedroom – or in another location on the second floor if there are no bedrooms on that floor – in lieu of the second exit from the that floor.
a. in one of
b. near the
c. in each
d. all of the above

30. Where the second floor of a building is the lowest floor level in a dwelling unit, as in an up-and-down duplex, no exit from the unit may go through another dwelling unit or other party's occupancy on the _____ floor.
a. second
b. basement
c. first
d. none of the above

31. A _____ used for the sole purpose of reaching the top of the platform or fixture is exempt from the requirements of s. SPS 321.04.
a. Step
b. stair
c. both a & b
d. none of the above

32. If the bottom of the areaway is more than ___ inches below adjacent grade or the top of the areaway enclosure, the areaway shall be provided with a ladder or stair to aid egress. Steps Stairs used to comply with this section are exempt from the requirements of s. SPS 321.04.
a. 36
b. 42
c. 46
d. 64

33. Ladders or other stairs used to comply with subd. 4. may infringe on the required area of the areaway by a maximum of ___ inches.
a. 3
b. 4.5
c. 6

d. none of the above

SECTION 34. SPS 321.03 (6) (f) and (Note) are created to read:

SPS 321.03 (6) (f) An egress window under a deck or porch shall discharge through a clear path of at least 36 inches in height and 36 inches in width, and no more than 15 feet in length, to a yard or open space.

Note: Under this paragraph, there is no maximum height above grade for an egress window. Similarly, egress windows are not prohibited from discharging to a roof, regardless of the slope of the roof.

SECTION 35. SPS 321.03 (7) (a) 4. and (8) (b), and (c) 1. and 3. are amended to read:

SPS 321.03 (7) (a) 4. Where sliding doors are used as a required exit, the clear opening shall be at least ~~30~~ 29 inches wide and be at least 76 inches high.

(8) (b) Balconies shall be provided with ~~guardrails~~ guards in accordance with s. SPS 321.04 (3).

(c) 1. The balcony ~~guardrail~~ guard shall terminate no more than 46 inches above the floor level of the balcony.

3. The floor of the balcony shall have minimum dimensions of 3 feet by 3 feet. The ~~guardrail~~ guard and its supports may infringe on the dimensions of the required area.

SECTION 36. SPS 321.03 (11) is created to read:

SPS 321.03 (11) EXITS TO COURTYARDS. No exit may discharge to a courtyard having a perimeter that is entirely enclosed by exterior building walls or other obstructions that prevent pedestrian passage.

34. Balconies shall be provided with _____ in accordance with s. SPS 321.04 (3).
    a. guardrails
    b. guards
    c. both a & b
    d. none of the above

35. An egress window under a deck or porch shall discharge through a clear path of at least ___ inches in height.
    a. 46
    b. 32
    c. 36
    d. 15

36. An egress window under a deck or porch shall discharge through a clear path of at least ___ inches in width.
    a. 46
    b. 32
    c. 36
    d. 15

37. An egress window under a deck or porch shall discharge through a clear path no more than ___ feet in length, to a yard or open space.
    a. 46
    b. 32
    c. 36
    d. 15

38. The balcony guardrail guard shall terminate no more than __ inches above the floor level of the balcony.
    a. 46
    b. 32
    c. 36
    d. 15
39. The floor of the balcony shall have minimum dimensions of _____ feet.
    a. 3 x 4
    b. 4 x 4
    c. 3 x 3
    d. 6 x 6
40. The guard and its supports may not infringe on the dimensions of the required area.
    a. true
    b. false
41. No exit may discharge to a courtyard having a perimeter that is _____.
    a. entirely enclosed by exterior building walls
    b. obstructed to prevent pedestrian passage
    c. both a & b
    d. none of the above

SECTION 37. SPS 321.04 (1) (a) 2., (2) (a) 1. and (c) 4. a. and b., and (3) (title) and (a) 1. to 5. are amended to read:

SPS 321.04 (1) (a) 2. Tub access ~~steps~~ stairs, unless they are an integral part of an approved plumbing product shall conform to the requirements of this section.

(2) (a) 1. Except for spiral staircases under subd. 2., stairways shall measure at least 36 inches in width. Handrails and associated trim may project a maximum of 4.5 inches into the required width at each side of the stairway. The minimum clear width at and below the handrail, including at treads and landings, may not be less than 31.5 inches where a handrail is installed on one side, and 27 inches where handrails are provided on both sides.

(c) 4. a. An individual winder tread may be placed between rectangular treads or at the end of a flight of rectangular treads provided the tread depth is at least 9 inches, when measured at a ~~point~~ distance of 12 inches from the narrow end~~, is equal to the tread depth of the rectangular steps in the flight~~ of the tread or from the inside face of the wall.
b. There may be more than one individual winder tread in a stairway ~~or in a flight of stairs~~.

42. The minimum clear width at and below the handrail, including at treads and landings, may not be less than ____inches where a handrail is installed on one side.
    a. 27
    b. 32
    c. 31.5
    d. 36
43. The minimum clear width at and below the handrail, including at treads and landings, may not be less than ____ inches where handrails are provided on both sides.
    a. 27
    b. 32
    c. 31.5
    d. 36

44. Handrails and associated trim may project a maximum of 4.5 inches into the required width at _____ side of the stairway.

a. each
b. only one
c. both a & b
d. none of the above

45. Tub access stairs, unless they are an integral part of an approved plumbing product ____ conform to the requirements of this section.

a. may
b. shall
c. should
d. none of the above

46. An individual winder tread may be placed between rectangular treads or at the end of a flight of rectangular treads provided the tread depth is at least 9 inches, when measured at a distance of ___ inches from the narrow end of the tread or from the inside face of the wall.

a. 9
b. 10
c. 12
d. 18

47. There may be more than one individual winder tread in a _____.

a. stairway
b. flight of stairs
c. both a & b
d. none of the above

---

(3) (title) HANDRAILS AND ~~GUARDRAILS~~ GUARDS.

(a) 1. ~~Stair flights~~ A flight of stairs with more than 3 risers shall be provided with at least one handrail for the full length of the ~~stair~~ flight.

2. ~~Handrails or guardrails~~ Guards shall be provided on all open sides of ~~stair~~ ~~flights~~ stairs consisting of more than 3 risers and on all open sides of areas that are elevated more than 24 inches above the floor or exterior grade.

Note: A handrail provided at 30 to 38 inches above the tread nosing meets the height requirement for a ~~guardrail~~ guard on a stairway.

3. a. Except as provided in subd. 3. b., ~~handrails and guardrails~~ guards shall be constructed to prevent the through-passage of a sphere with a diameter of 4 3/8 inches ~~or larger~~, when applying a force of 4 pounds.

b. The triangular area formed by the tread, riser and bottom rail shall have an opening size that prevents the through-passage of a sphere with a diameter of 6 inches ~~or larger~~, when applying a force of 4 pounds.

c. Rope, cable, or similar materials used in ~~handrail or guardrail~~ guard infill shall be strung with maximum openings of 3½ inches with vertical supports a maximum of 4 feet apart.

4. a. Handrails and ~~guardrails~~ guards shall be designed and constructed to withstand a 200 pound load applied in any direction.

b. Handrail or ~~guardrail~~ guard infill components, balusters and panel fillers shall withstand a horizontally applied perpendicular load of 50 pounds on any one-foot-square area.

c. Glazing used in handrail or ~~guardrail~~ guard assemblies shall be safety glazing.

5. Exterior handrails and ~~guardrails~~ guards shall be constructed of metal, decay resistant or pressure-treated wood, or shall be protected from the weather.

SECTION 38. SPS 321.04 (3) (b) 1. is renumbered SPS 321.04 (3) (b) 1. a. and amended to read:

SPS 321.04 (3) (b) 1. a. Handrails shall be located at least 30 inches, but no more than 38 inches above the nosing of the treads, except as provided in subds. 1. b. to d. Measurement shall be taken from the hard structural surface beneath any finish material to the top of the rail. Variations in uniformity are allowed only when a rail contacts a wall or newel post or where a turnout or volute is provided at the bottom ~~step~~ tread.

48. Hand rails and guards shall be provided on all open sides of stair flights stairs consisting of more than 3 risers and on all open sides of areas that are elevated more than ____ inches above the floor or exterior grade.

a. 20
b. 24
c. 30
d. 36

49. A handrail provided at _____ inches above the tread nosing meets the height requirement for a guard on a stairway.

a. 32 to 38
b. 29 to 34
c. 30 to 38
d. 34 to 42

50. Guards shall be constructed to prevent the through-passage of a sphere with a diameter of _____ inches when applying a force of 4 pounds.

a. 4
b. 4 1/2
c. 4 3/8
d. 6

51. The triangular area formed by the tread, riser and bottom rail shall have an opening size that prevents the through-passage of a sphere with a diameter of ____ inches when applying a force of 4 pounds.

a. 4
b. 4 1/2
c. 4 3/8
d. 6

52. Rope, cable, or similar materials used in guard infill shall be strung with maximum openings of ____ inches

a. 3 1/2
b. 4
c. 6
d. 8

53. Rope, cable, or similar materials used in guard infill shall be strung with maximum vertical supports a maximum of ____ feet apart.

a. 3 1/2

b. 4
c. 6
d. 8

54. _____ shall be designed and constructed to withstand a 200 pound load applied in any direction.
a. guard rails
b. hand rails
c. guards
d. both b & c

55. Handrail or guard infill components, balusters and panel fillers shall withstand a horizontally applied perpendicular load of ____ pounds on any one-foot-square area.
a. 200
b. 100
c. 50
d. 150

56. Glazing used in handrail or guard assemblies shall be _____.
a. tempered glass
b. safety glazing
c. both a & b
d. none of the above

57. Exterior handrails and guards shall be constructed of _____, or shall be protected from the weather.
a. metal
b. decay resistant
b. pressure-treated wood
d. all of the above

SECTION 39. SPS 321.04 (3) (b) 1. b. to d. are created to read:

SPS 321.04 (3) (b) 1. b. A volute, turnout, or starting easing that does not comply with subd. 1. a. may extend over the lowest tread.

c. Transition fittings on handrails may extend above the 38-inch height limit.

d. Where handrail fittings or bendings are used to provide a continuous transition between flights, or at winder treads, or from a handrail to a guard, or at the start of a flight, the height at the fittings or bendings may exceed 38 inches.

SECTION 40. SPS 321.04 (3) (b) 3. a. and b. and (c) (title) and 1. a. are amended to read:

SPS 321.04 (3) (b) 3. 'Winders.' a. Except as provided under subd. 3. b., the required handrail on winder ~~steps~~ stairs shall be placed on the side where the treads are wider.

b. Where all winder ~~steps~~ treads in a flight have a ~~tread~~ depth of at least 9 inches from nosing to nosing measured at a point 12 inches from the narrow end of the tread, the required handrail may be located on either side of the stairway.

(c) (title) ~~*Guardrails*~~ *Guards.*

1. a. All openings between floors, and open sides of landings, platforms, balconies or porches that are more than 24 inches above grade or a floor shall be protected with ~~guardrails~~ guards.

SECTION 41. SPS 321.04 (3) (c) 1. d. is created to read:

SPS 321.04 (3) (c) 1. d. This paragraph (guards) does not apply to window wells, egress wells, and retaining walls.

SECTION 42. SPS 321.04 (3) (c) 2. and 3. and (4) (a) 2. and (b) are amended to read:

SPS 321.04 (3) (c) 2. 'Height.' ~~Guardrails~~ Guards shall ~~be located~~ extend to at least 36 inches above the floor or to the underside of a stair handrail complying with s. SPS 321.04 (3) (b). Measurement shall be taken from the hard structural surface beneath any finish material to the top of the ~~rail~~ guard.

3. 'Opening size.' ~~Guardrails~~ Guards shall be constructed to prevent the through- passage of a sphere with a diameter of 4 3/8 inches ~~or larger~~, when applying a force of 4 pounds.

58. Where handrail fittings or bendings are used to provide a continuous transition between flights, or at winder treads, or from a handrail to a guard, or at the start of a flight, the height at the fittings or bendings may exceed ____ inches.
    a. 30
    b. 32
    c. 34
    d. 38

59. A volute, turnout, or starting easing that does not comply with subd. 1. a. may extend over the _____ tread.
    a. lowest
    b. mid
    c. entire
    d. highest

60. Transition fittings on handrails may extend _____ height limit.
    a. below the lowest 30 inch
    b. above the 38 inch
    c. above the 30 inch
    d. below the lowest 38 inch

61. Where all winder treads in a flight have a depth of at least 9 inches from nosing to nosing measured at a point 12 inches from the narrow end of the tread, the required handrail may be located on _____ of the stairway.
    a. wide
    b. narrow
    c. either side
    d. none of the above

62. All openings between floors, and open sides of landings, platforms, balconies or porches that are more than 24 inches above grade or a floor shall be protected with _____.
    a. handrails
    b. guardrails
    c. guards
    d. all of the above

63. Guards do not apply to _____.
    a. window wells
    b. egress wells
    c. retaining walls
    d. all the above

64. Guards shall extend to at least ____ inches above the floor or to the underside of a stair handrail complying with s. SPS 321.04 (3) (b).

a. 30
b. 32
c. 34
d. 36

65. Measurement shall be taken from the hard structural surface beneath any finish material to the ____of the rail guard.

a. bottom
b. mid-point
c. top
d. all of the above

66. Guards shall be constructed to prevent the through- passage of a sphere with a diameter of ___inches.

a. 4
b. 4 3/8
c. 6
d. none of the above

67. Guards shall be constructed to prevent the through- passage of the above questions sphere when applying a force of ___ pounds.

a. 2
b. 3
c. 4
d. 50

---

(4) (a) 2. Intermediate landings that connect 2 or more straight flights of stairs, or 2 flights of stairs at a right angle, shall be at least as wide as the stairway treads and shall measure at least 36 inches in the direction of travel.

(b) *Landings at the top and base of stairs.* A level landing shall be provided at the top and base of every stairs except as provided in par (d). The landing shall be at least as wide as the ~~stairs~~ treads and shall measure at least 3 feet in the direction of travel.

SECTION 43.

SPS 321.04 (4) (c) 1. is renumbered SPS 321.04 (4) (c), and SPS

321.04 (4) (c) (intro.) and 3., as renumbered, are amended to read:

SPS 321.04 (4) (c) (intro.) *Doors at landings.* Except as provided in ~~subd.~~ subds. 1. ~~a.~~ to ~~c.~~ 3. and par. (d), level landings shall be provided on each side of any door located at the top or base of a ~~stairs~~ stair, regardless of the direction of swing. In the following exceptions, ~~stairways to~~ a stairway between a dwelling and an attached ~~garages~~ garage, ~~carports~~ carport or ~~porches are~~ porch is considered to be an interior ~~stairs~~ stair:

SECTION 45. SPS 321.04 (4) (d) (title) and 2. are created to read:

SPS 321.04 (4) (d) (title) *Exterior landings.*

2. The landing at the base of an exterior stair shall be sloped away from the stair at a minimal rate that ensures drainage.

SECTION 46. SPS 321.045 (4) (c) is renumbered SPS 321.045 (4) (c) 1. and amended to read:

SPS 321.045 (4) (c) 1. Open-sided ramps shall have the area below the handrail protected by intermediate rails or an ornamental pattern to prevent the passage of a sphere with a diameter of 4 3/8 inches ~~or larger~~ when applying a force of 4 pounds, except as provided in subd. 2.

SECTION 47. SPS 321.045 (4) (c) 2. is created to read:

SPS 321.045 (4) (c) 2. This paragraph does not apply to ramps having a walking surface that is less than 24 inches above adjacent grade, if a toe-kick or side rail is provided to 4 inches above the walking surface, and a mid-rail is provided between the toe-kick or side rail and the handrail.

68. A level landing shall be provided at the top and base of every stairs except as provided in par (d). The landing shall be at least as wide as the _____.
    a. stair
    b. tread
    c. both a & b
    d. none of the above

69. A level landing shall be provided at the top and base of every stairs except as provided in par (d). The landing shall be at least ____ inches in the direction of travel.
    a. 30
    b. 32
    c. 34
    d. 36

70. Level landings shall be provided on each side of any door located at the ____of a stair, regardless of the direction of swing.
    a. top
    b. base
    c. both a & b
    d. none of the above

71. level landings shall be provided on each side of any door except at stairway between a dwelling and an _____ is considered to be an interior stair.
    a. attached garage
    b. carport
    c. porch
    d. all of the above

72. The landing at the base of an _____ stair shall be sloped away from the stair at a minimal rate that ensures drainage.
    a. interior
    b. exterior
    c. both a & b
    d. none of the above

73. Open-sided ramps shall have the area below the handrail protected by intermediate rails or an ornamental pattern to prevent the passage of a sphere with a diameter of ____ inches.
    a. 4
    b. 4 3/8
    c. 6
    d. none of the above

SECTION 48. SPS 321.05 (1) (intro.) is amended to read:

SPS 321.05 (1) (intro.) NATURAL LIGHT. ~~All~~ Each habitable ~~rooms~~ room shall be provided with natural light by means of glazed openings. The area of the glazed openings shall be at least 8% of the net floor area, except under the following circumstances:

SECTION 49. SPS 321.05 (1m) is created to read:

SPS 321.05 (1m) NET FLOOR AREA. For the purposes of subs. (1) and (2), "net floor area" does not include any area with a ceiling height of less than 5 feet.

SECTION 50. SPS 321.05 (2) (a) is renumbered SPS 321.05 (2) (a) 1. and amended to read:

SPS 321.05 (2) (a) 1. Natural ventilation shall be provided to ~~all~~ each habitable ~~rooms~~ room by means of openable doors, skylights or windows. The net area of the openable doors, skylights or windows shall be at least 3.5% of the net floor area of the room, except as provided in subd. 2. Balanced mechanical ventilation may be provided in lieu of openable exterior doors, skylights or windows provided the system is capable of providing at least one air change per hour of fresh outside air while the room is occupied. Infiltration may not be considered as make-up air for balancing purposes.

SECTION 51. SPS 321.05 (2) (a) 2. is created to read:

SPS 321.05 (2) (a) 2. Any area with a ceiling height of less than 5 feet may be excluded from the net floor area.

74. NET FLOOR AREA. For the purposes of subs. (1) and (2), "net floor area" does not include any area with a ceiling height of less than ____ feet.

a. 5
b. 6
c. 7
d. 8

75. NATURAL LIGHT. ~~All~~ Each habitable room shall be provided with natural light by means of glazed openings. The area of the glazed openings shall be at least ___% of the net floor area

a. 6
b. 7
c. 8
d. 10

76. Natural ventilation shall be provided to each habitable room by means of openable _____.

a. doors
b. skylights
c. windows
d. all of the above

77. The net area of the openable doors, skylights or windows shall be at least ____% of the net floor area of the room, except as provided in subd. 2.

a. 3.5
b. 4
c. 8
d. none of the above

78. Balanced mechanical ventilation may be provided in lieu of openable exterior doors, skylights or windows provided the system is capable of providing at least ____ air change per hour of fresh outside air while the room is occupied.

a. 1/2
b. 1
c. 2
d. 3

79. _____ may not be considered as make-up air for balancing purposes.

a. Leakage
b. Infiltration
c. Gaps
d. all of the above

SECTION 52. SPS 321.05 (3) (intro.) and (a) to (d) are renumbered SPS 321.05 (3) (am) (intro.) and 1.to 4 and SPS 321.05 (3) (a) (intro.), 1. (intro.), and a., as renumbered, are amended to read:

SPS 321.05 (3) (am) (intro.) Except as provided in par. ~~(e)~~ (b), glazing shall consist of safety glass meeting the requirements of ~~CPSC~~ either 16 CFR, Part 1201 or ANSI Z97.1 when installed in any of the following locations:

1. (intro.) In any sidelight or glazing adjacent to a door, that meets all of the following:

a. The nearest point of the glazing is within 2 feet of the door when the door is in the closed position.

SECTION 53. SPS 321.05 (3) (e) is renumbered SPS 321.05 (3) (bm) (intro.) and amended to read:

SPS 321.05 (3) (bm) (intro.) Safety glass is not required where ~~the size of an individual pane of glass is 8 inches or less in the least dimension.~~ glazing meets any of the following:

SECTION 54. SPS 321.05 (3) (bm) 1. to 3. are created to read:

SPS 321.05 (3) (bm) 1. The size of an individual pane of glass is 8 inches or less in the least dimension.

2. The safety glass is required by sub. (3) (am) 1. and the only door within 2 feet of the glazing is the fixed panel of a patio door.

3. The safety glass is required by sub. (3) (am) 1. and there is an intervening wall or other permanent barrier between the door and the glazing.

SECTION 55. SPS 321.05 (3) (a) 5. is created to read:

SPS 321.05 (3) (a) 5. In guard assemblies.

80. Glazing shall consist of safety glass meeting the requirements of either _____.

a. 16 CFR
b. Part 1201
c. ANSI Z97.1
d. all of the above

81. Glazing shall consist of safety glass in any sidelight or glazing adjacent to a door that meets all of the following:

a. The nearest point of the glazing is within 2 feet of the door when the door is in the closed position.
b. The nearest point of the glazing is within 2 feet of the door when the door is in the open position.
c. both a & b
d. none of the above

82. Safety glass is not required where glazing meets any of the following:
a. The size of an individual pane of glass is 8 inches or less in the least dimension.
b. The safety glass is required by sub. (3) (am) 1. and the only door within 2 feet of the glazing is the fixed panel of a patio door.
c. The safety glass is required by sub. (3) (am) 1. and there is an intervening wall or other permanent barrier between the door and the glazing.
d. all of the above

SECTION 56. SPS 321.06 is renumbered SPS 321.06 (intro.), (1) (a), and (2), and amended to read:

SPS 321.06 Ceiling height. All habitable rooms, kitchens, hallways, bathrooms and corridors shall have a ceiling height of at least 7 feet~~. Habitable rooms~~, except as follows:

(1) (a) Rooms may have ceiling heights of less than 7 feet provided at least 50% of the room's floor area has a ceiling height of at least 7 feet. Any area with a ceiling height of less than 5 feet may be ignored in this calculation.

(2) Beams and girders or other projections ~~shall not~~ may project to no more than 8 inches below the required ceiling height.

SECTION 57. SPS 321.06 (1) (b) and (3) to (6) are created to read:

SPS 321.06 (1) (b) The 50% limit in par. (a) does not apply to subs. (3) to (6).

(3) The ceiling height extending back from the front edge of a water closet may slope to below 7 feet, but may not go below 5 feet until beyond the back of the water closet.

(4) The ceiling height extending back from the front edge of a lavatory may be less than 7 feet, but may not go below 5 feet until beyond the back of the lavatory.

(5) A ceiling height of less than 7 feet may be provided between the rear rim of a bathtub and a wall of the room abutting that rim, or between the side rim and a room wall abutting that rim.

(6) A ceiling height of less than 7 feet may be provided between the rear wall of a shower stall and a wall of the room abutting that rear wall, or between the side wall of a shower and a room wall abutting that side wall.

Note: Section SPS 384.20 (5) (o) 4. establishes minimum horizontal clearances for water closets, and reads as follows: "A water closet may not be located closer than 15 inches from its center to any side wall, partition, vanity, or other obstruction, nor closer than 30 inches center to center, between water closets. There shall be at least 24 inches clearance in front of a water closet to any wall, fixture or door."

Note: See ch. SPS 384 Appendix for further explanatory material.

83. All habitable rooms, kitchens, hallways, bathrooms and corridors shall have a ceiling height of at least ____.

a. 6’ 8”
b. 5’
c. 7’
d. 6’ 4”

84. Rooms may have ceiling heights of less than 7 feet provided at least _____% of the room’s floor area has a ceiling height of at least 7 feet.
a. 40
b. 50
c. 60
d. none of the above

85. Any area with a ceiling height of less than ___ feet may be ignored in the above calculation.
a. 6’ 8”
b. 5’
c. 7’
d. 6’ 4”

86. Beams and girders or other projections shall not project more than ___ inches below the required 7’ ceiling height.
a. 6
b. 7
c. 8
d. none of the above

87. The ceiling height extending back from the front edge of a water closet may slope to below 7 feet, but may not go below 5 feet until beyond the _____of the water closet.
a. front
b. mid-point
c. back
d. none of the above

88. The ceiling height extending back from the front edge of a lavatory may be less than 7 feet, but may not go below 5 feet until beyond the _____ of the lavatory.
a. front
b. mid-point
c. back
d. none of the above

89. A ceiling height of less than ____feet may be provided between the rear rim of a bathtub and a wall of the room abutting that rim, or between the side rim and a room wall abutting that rim.
a. 6’ 8”
b. 5’
c. 7’
d. 6’ 4”

90. A ceiling height of less than ___ feet may be provided between the rear wall of a shower stall and a wall of the room abutting that rear wall, or between the side wall of a shower and a room wall abutting that side wall.
a. 6’ 8”
b. 5’
c. 7’
d. 6’ 4”

To obtain your Continuing Education Credits follow the below instructions.

1. Print out first.
2. Fill in all fields applicable. **Fee $25**
3. Include your certification or license number if applicable.
4. We'll take care of crediting with the state and sending you back a verification form.

Send by mail

1. **The answer sheet and this page only.**
2. Fill out this form below completely.
3. Applicable fees by check payable to our business name: **GaryKlinka.com**
4. Mail to: **GaryKlinka.com** at 1316 Cardinal Circle, Neenah, WI 54956.

Live Support at 920-381-6714 or tmklinka@hotmail.com

----------Educational Course Attendance Verification Form ----------

Attendee's Name_____ Date_____

Address_____

Credential Number_____ Phone#_____

Course Title and Name 2016 UDC Update Quiz Part 1of 2

List each credential held by attendee_____

_____ Credited Hours 3 hrs Fee:$25

Email address_____ Fax#_____

To be completed by GaryKlinka.com

Course Password_____ Course ID# 17726

Attendee passed the course with a greater than 70% score on Date_____

Instructor Signature_____

2016 UDC Update Quiz Part 1 of 2

1	a	b	c	d	31	a	b	c	d	61	a	b	c	d
2	a	b	c	d	32	a	b	c	d	62	a	b	c	d
3	a	b	c	d	33	a	b	c	d	63	a	b	c	d
4	a	b	c	d	34	a	b	c	d	64	a	b	c	d
5	a	b	c	d	35	a	b	c	d	65	a	b	c	d
6	a	b	c	d	36	a	b	c	d	66	a	b	c	d
7	a	b	c	d	37	a	b	c	d	67	a	b	c	d
8	a	b	c	d	38	a	b	c	d	68	a	b	c	d
9	a	b	c	d	39	a	b	c	d	69	a	b	c	d
10	a	b	c	d	40	a	b	c	d	70	a	b	c	d
11	a	b	c	d	41	a	b	c	d	71	a	b	c	d
12	a	b	c	d	42	a	b	c	d	72	a	b	c	d
13	a	b	c	d	43	a	b	c	d	73	a	b	c	d
14	a	b	c	d	44	a	b	c	d	74	a	b	c	d
15	a	b	c	d	45	a	b	c	d	75	a	b	c	d
16	a	b	c	d	46	a	b	c	d	76	a	b	c	d
17	a	b	c	d	47	a	b	c	d	77	a	b	c	d
18	a	b	c	d	48	a	b	c	d	78	a	b	c	d
19	a	b	c	d	49	a	b	c	d	79	a	b	c	d
20	a	b	c	d	50	a	b	c	d	80	a	b	c	d
21	a	b	c	d	51	a	b	c	d	81	a	b	c	d
22	a	b	c	d	52	a	b	c	d	82	a	b	c	d
23	a	b	c	d	53	a	b	c	d	83	a	b	c	d
24	a	b	c	d	54	a	b	c	d	84	a	b	c	d
25	a	b	c	d	55	a	b	c	d	85	a	b	c	d
26	a	b	c	d	56	a	b	c	d	86	a	b	c	d
27	a	b	c	d	57	a	b	c	d	87	a	b	c	d
28	a	b	c	d	58	a	b	c	d	88	a	b	c	d
29	a	b	c	d	59	a	b	c	d	89	a	b	c	d
30	a	b	c	d	60	a	b	c	d	90	a	b	c	d