Construction and Industry
Journeyman-Electrician
Electrician Exam

Latest Version: 6.0

Question: 1

For indoor installations, the building or structure grounding electrode system shall be used as the _____ for the separately derived system.

A. Grounding electrode
B. Grounding electrode conductor
C. Grounded conductor
D. Grounding conductor

Answer: A

Explanation:
250.30(AX4). All electrodes present in an installation must be bonded together to form a grounding electrode system. Separately derived systems are no different, and bonding all electrodes to a grounding electrode system ensures that no potential difference is created between the earth and exposed, normally non-current carrying metal parts.

Question: 2

In health care facilities, the cover plates for the electrical receptacles supplied from the _____ shall have a distinctive color or marking so as to be readily identifiable.

A. Life safety branch
B. Critical branch
C. Normal branch
D. Both a and b

Answer: D

Explanation:
517.29(E). Receptacles that are supplied by the life safety branch and the critical branch shall have a distinctive color or marking used for identification. Receptacles supplied from these branches are often required to indicate the panelboard and branch-circuit number supplying them.

Question: 3

A pull box is installed to contain splices on insulated circuit conductors that are 4 AWG or larger and required to be insulated. Two rows of conduits enter the box on the same wall. One row of conduits consists of four I-inch EMT conduits and two 2-inch EMT conduits. The other row of conduits consists of three 2-inch in conduits. Determine the minimum distance between the

conduit entry inside the box and the opposite wall of the box.

A. 12 inches
B. 16 inches
C. 18 inches
D. 24 inches

Answer: C

Explanation:

314.28(A)(2). For angle, U pull, or splice boxes, the minimum distance between the wall where the conduits enter a box and the opposite wall must be six times the diameter of the largest conduit plus the diameter of each conduit in that same row. The larger of the two minimum distances should be used. Both must be calculated:

Conduit row 1: Four 1-inch EMT and three 2-inch EMT

$$2 \text{ inches} \times 6 = 12 \text{ inches}$$

$$12 \text{ inches} + 2 \text{ inches} + 1 \text{ inch} + 1 \text{ inch} + 1 \text{ inch} + 1 \text{ inch} = 18 \text{ inches}$$

Conduit row 2: Two 2-inch EMT

$$2 \text{ inches} \times 6 = 12 \text{ inches}$$

$$12 \text{ inches} + 2 \text{ inches} + 2 \text{ inches} = 16 \text{ inches}$$

The minimum distance required between the conduit entry inside the pull box and its opposite wall is then 18 inches.

Question: 4

How may lighting outlets are required for a dwelling containing three outdoor entrances and two garage doors?

A. 1
B. 2
C. 3
D. 4

Answer: B

Explanation:
210.70(A)(2)(2). For dwelling units, at least one lighting outlet controlled by a listed wall-mounted control device shall be installed to provide illumination on the exterior of the grade level entrance or exit The NEC does not consider a garage door to be an entrance or exit, and therefore does not require a lighting outlet

Question: 5

Receptacles installed in bathrooms shall be located within _____of the outside edge of each basin.

A. 1 foot
B. 2 feet
C. 3 feet
D. 4 feet

Answer:

Explanation:
210.52(D). At least one receptacle outlet must be installed in each bathroom, and it must be located within 3 feet of each basin. If more than one basin exists, a single receptacle located within 3 feet of both basins will fulfill the requirements of this section. The receptacle must be located on a wall or partition adjacent to the basin or installed on the side or face of the basin cabinet The receptacle must not be installed more than 12 inches the countertop.

Question: 6

Dry-type transformers, 1,000 volts nominal or less, located in the open on walls, columns, or structures,

A. Shall be of the totally enclosed type
B. Shall be of the non-ventilated type
C. Shall be required to be readily accessible
D. Shall not be required to readily accessible

Answer: D

Explanation:
450.13(A). When dry-type transformers 1,000 volts or less are installed in the open on walls, columns, or structures, they shall not be required to be readily accessible. 450.13 requires that all transformer and transformer vaults shall be readily accessible to qualified personnel for inspection and maintenance, except for the scenario and the scenario described in 450.13(B).

Question: 7

A branch circuit supplies a combination of continuous and non-continuous loads. The continuous load is 6 amperes and the non-continuous load is 7 amperes. What is the minimum required standard ampere rating for this branch circuit?

A. 15 amperes
B. 20 amperes
C. 25 amperes

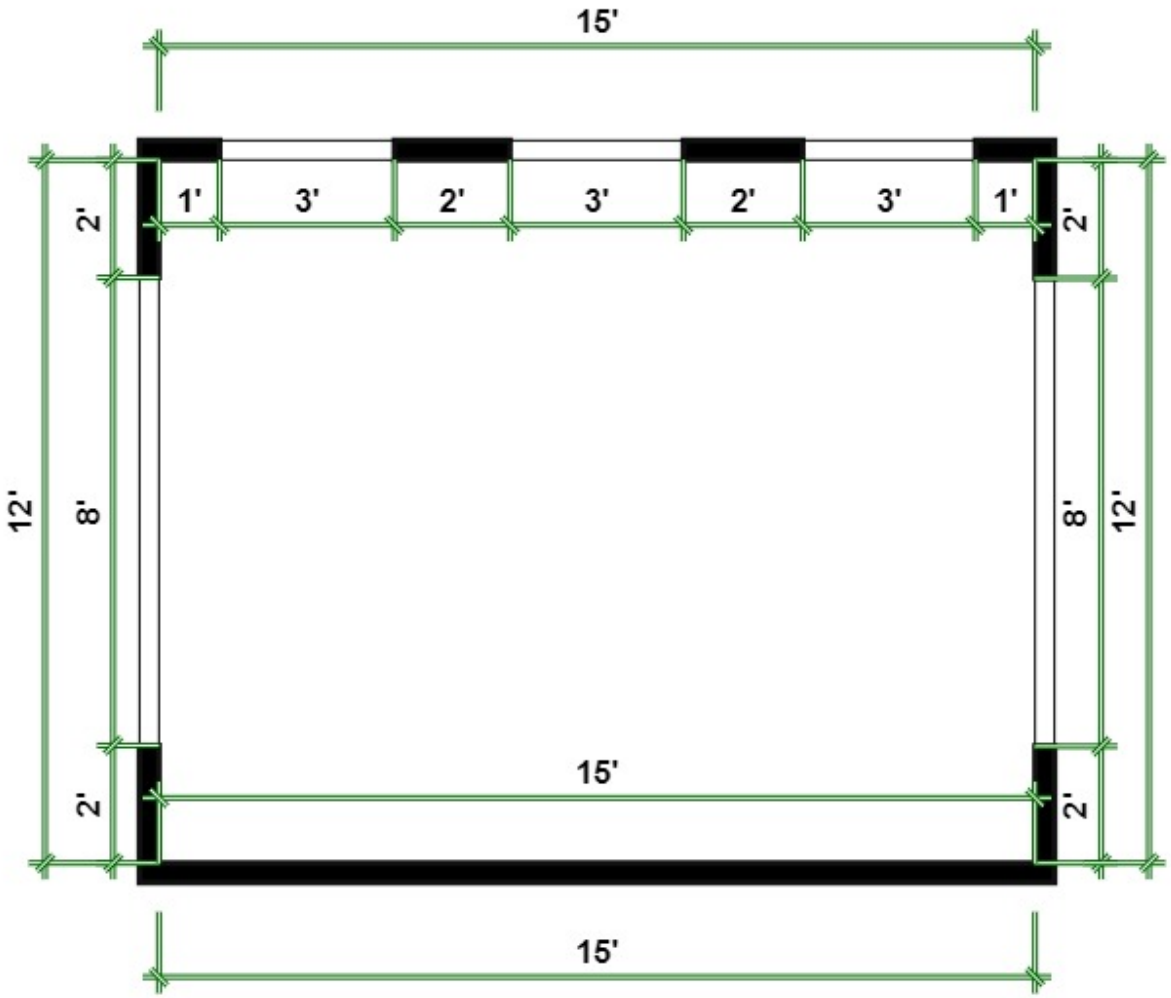
D. 30 amperes

Answer: A

Explanation:
210.20(A) requires that the ampacity of the branch circuit overcurrent protection device be based on 125% of the continuous load plus 100% of the non-continuous load.
Continuous load = 6 amperes x 1.25 = 7.5 amperes
Non-continuous load = 7 amperes
Total load = 14.5 amperes.
Standard ampere ratings are listed in 240.6. Based on this, 15 amperes is the minimum standard ampere rating.

Question: 8

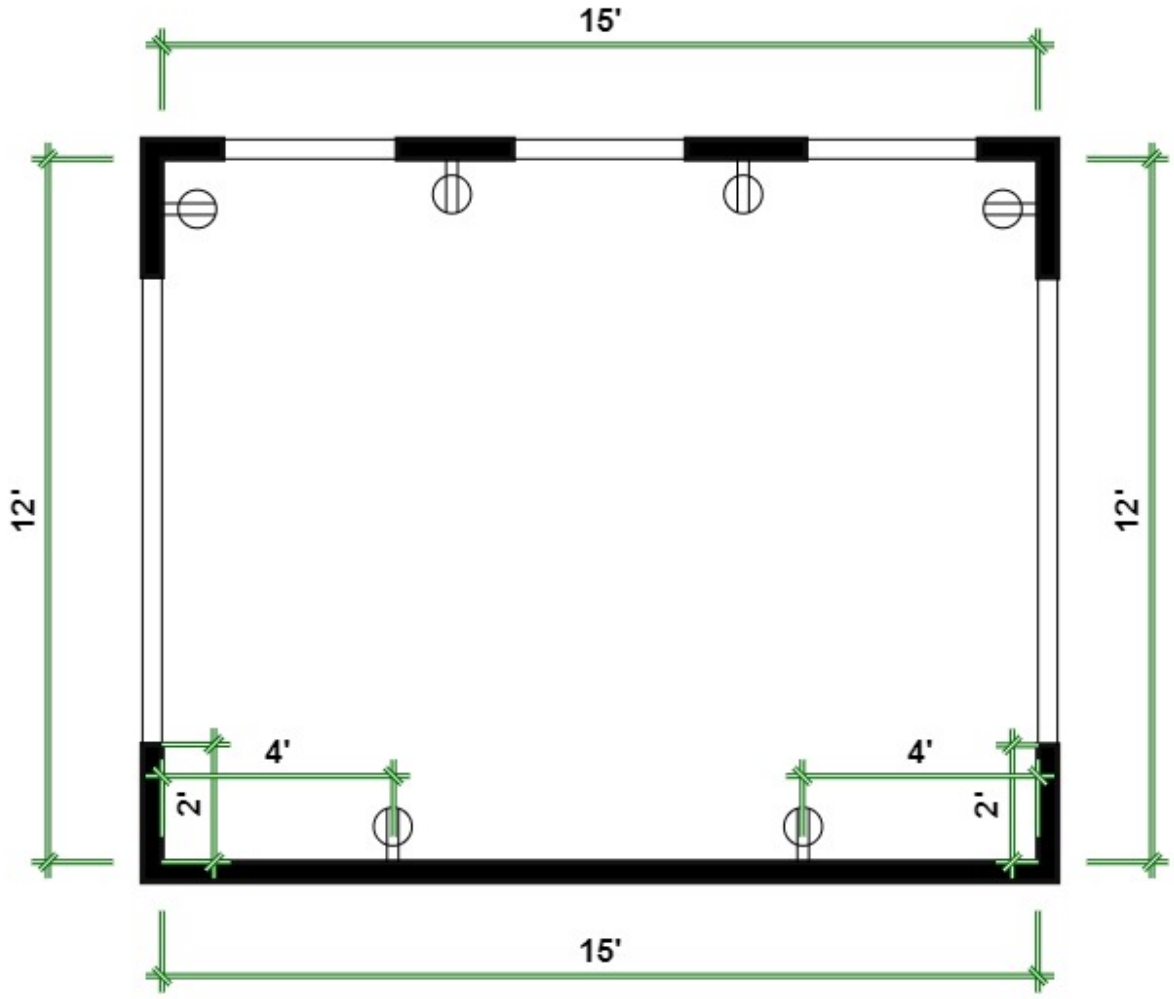
Determine the of wall space receptacles required to be installed in the room shown in the figure below.



A. 4
B. 5
C. 6
D. 7

Answer: C

Explanation:
Because each of the four wall segments along the top portion of the drawing is 2 feet or larger in length, they will each require a receptacle. Note that if the door openings along the top were windows, they would not be considered separate wall sections and would need to be measured as one continuous wall. The lower portion of the drawing must have receptacles within 6 feet of the openings, measured horizontally along the wall, and have no more than 12 feet between receptacles.



Question: 9

For Type IMC and RMC, where a conduit enters a_____ a bushing shall provided to protect the wires from abrasion unless the _____ is designed to provide such protection.

A. Box
B. Fitting
C. Enclosure
D. Any of the above

Answer: D

Explanation:
34246 and 344.46. For IMC, RMC, and several other wiring methods, the NEC requires that. where a conduit enters a box or other enclosure, a bushing shall be provided to protect the wires from abrasion unless the box, fitting, or enclosure is designed to provide such protection. An example of one such fitting is the Myers hub. This type of fitting has an integral plastic "throat" to protect conductors from abrasion by the threads. If this bushing requirement exists for a wiring method, the requirement can be found in section XXX.46 of the article for each wiring method. These requirements are in addition to the requirements of 300.4(G).

Question: 10

The following symbol found on a construction plan would most likely indicate what electrical device?

A. Duplex receptacle
B. Recessed luminaire
C. Recessed receptacle
D. Range receptacle

Answer: D

Explanation:
This symbol is most representative of a range receptacle, Symbols for receptacles contain one or more lines that transect a circle. For wall-mounted receptacles, the lines will continue past the edge of the circle and connect to the wall on which it will be mounted, Each line will represent either the number of receptacles in the enclosure or, in the case of a receptacle outlet that contains two ungrounded conductors having 240 volts between them as well as the common neutral conductor, the three transecting lines represent the number of current-carrying conductors. An example of the former is a duplex receptacle having two horizontal lines, or a quadruplex receptacle having two horizontal lines as well as two vertical lines. An example of the latter is a range or dryer receptacle

such as the one used for this question. Range and dryer receptacles will most commonly be differentiated by the letter "R" or "D," respectively.

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