

# SAMPLE QUESTIONS

## Missouri State Specific Land Surveyor's Exam

The Missouri State-Specific Surveyors Exam is split into two parts and examines seven subject areas: Part I, General: Missouri Standards for Property Boundary Surveys, Missouri Statutes and Board Rules, Missouri State Plane Coordinate System, and Missouri Riparian Boundaries. Additionally, the examinee writes a boundary description from a plat of survey (which is given as a part of the exam package). Part II, Public Lands: Missouri's Original GLO System, Resurveys on Missouri's USPLSS, and numerical calculation problems concerning reestablishment of lost corners on Missouri's USPLSS. Each Part is one hour and 15 minutes in length.

### Part I, General, representative questions:

- 4 pts. 1.) "Every surveyor who re-establishes a lost corner or restores an existent corner shall monument the corner and shall file an approved document with the Missouri Department of Agriculture within ninety (90) days from the date of the field work." Which one of the following is an approved document?
- (a) Certified Land Corner Document.
  - (b) The plat of survey showing the corner and its ties.
  - (c) Special form approved by the State Licensing Board.
  - (d) All of the above.
- 4 pts. 2.) Registrants shall undertake to perform land surveying services only when they, together with those whom the registrant may employ or engage as a consultant,
- (a) have been tested by NCEES in the specific technical areas involved.
  - (b) have a signed contract in their possession.
  - (c) have sufficient liability insurance to cover design errors or omissions.
  - (d) are qualified by education, training and experience in the specific technical areas involved.

- 6 pts. 3.) According to the Missouri Standards for Property Boundary Surveys, how many monuments must be set when surveying a new subdivision?
- 1.) Two permanent monuments per block.
  - 2.) Two permanent monuments for every four acres developed by subdivision.
  - 3.) If not previously set with a permanent monument, a semipermanent monument at each lot corner is required.
  - 4.) Two semipermanent monuments per block.
  - 5.) Permanent monuments at each controlling subdivision corner.
- (a) 1
- (b) 1, 3, 5
- (c) 2, 3
- (d) 2, 3, 5
- 4 pts. 4.) Missouri Standards for Property Boundary Surveys apply to which one of the following types of surveys?
- (a) Engineering
  - (b) Geodetic
  - (c) All surveys performed in the State of Missouri.
  - (d) Boundary surveys signed by a licensed surveyor.
- 3 pts. 5.) Published values for the Missouri State Plane Coordinate System shall be
- (a) State Plane Coordinate System (1983) in U.S. feet.
  - (b) State Plane Coordinate System (1983) in meters.
  - (c) State Plane Coordinate System (1927) in U.S. feet.
  - (d) State Plane Coordinate System (1927) in meters.

- 4 pts.      6.)    In Missouri, a riparian landowner owning land adjoining a nonnavigable river has title to
- (a) the water's edge.
  - (b) the high bank line.
  - (c) the thread of the stream.
  - (d) the centerline of the flow.
- 5 pts.      7.)    Every surveyor who establishes, restores or reestablishes one or more corners that create a new parcel shall:
- (a) File the results of such survey with the county assessor for taxation purposes.
  - (b) Send the results of such survey to the Land Survey Program of the Missouri Department of Agriculture.
  - (c) Retain the results of such survey in order to reduce liability for the survey.
  - (d) File the results of such survey with the recorder of deeds in the county or counties in which the survey is situated.

Part II, USPLSS, representative questions:

- 4 pts. 8.) On a GLO plat of a township you notice that the north-south dimensions of the interior sections such as 15, 16, 17, 20, 21, 22, 23 are not shown on the plat. The reason for this is:
- (a) The GLO draftsman made a mistake and left them off.
  - (b) Since these dimensions are not used in retracement surveys, they are not shown.
  - (c) They are understood to be exactly 80.00 chains record.
  - (d) They must be calculated by proportioning from the dimensions given on the township's range lines.
- 6 pts. 9.) Double proportionate measure is used to re-establish which of the following lost corners?
- 1.) Township corner on a correction line.
  - 2.) Normal township corner.
  - 3.) Section corner in the interior of a township.
  - 4.) Center of section.
  - 5.) Section corner on a range line or township line.
- (a) 2, 3, 5
  - (b) 1, 2, 3, 5
  - (c) 3, 4
  - (d) 2, 3
- 4 pts. 10.) Recovered original township, section, and quarter section corners must be considered as the \_\_\_\_\_ corner positions which they were intended to represent.
- (a) approximate
  - (b) original
  - (c) true
  - (d) none of the above

3 pts. 11.) Which of the following research information would not be necessary in conducting the resurvey of a parcel?

- 1.) Title commitment.
- 2.) Adjoiners' deeds.
- 3.) GLO plat and field notes.
- 4.) Surveys of record.
- 5.) Assessor's mapping.

- (a) 1
- (b) 1, 2, 5
- (c) 5
- (d) 1, 5

3 pts. 12.) With respect to the Code of Professional Conduct, which of the following statements are correct?

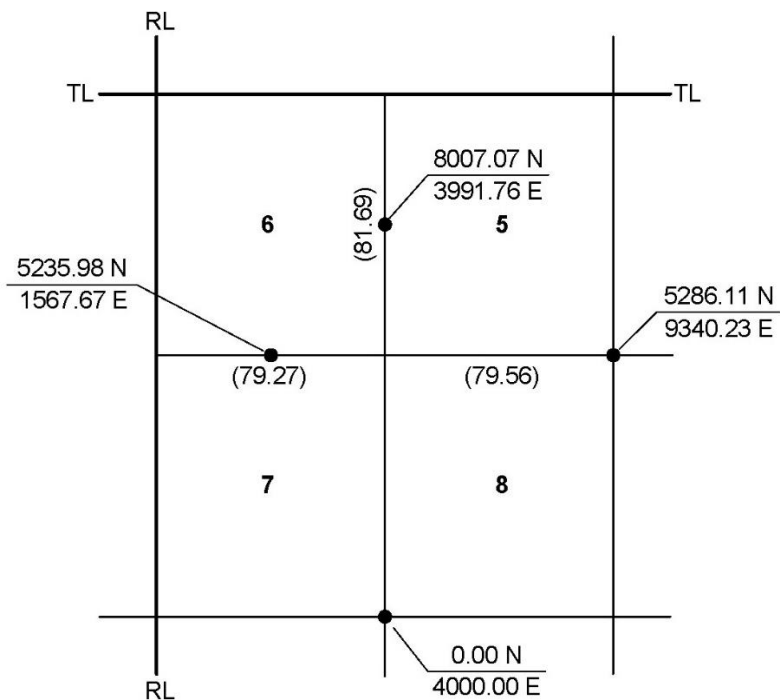
- 1.) The licensee's primary obligation is to protect the safety, health, property or welfare of the public.
- 2.) Licensees shall act with care and apply the technical knowledge and skill which are ordinarily applied by licensees of good standing, practicing in Missouri.
- 3.) Licensees shall not accept compensation from more than one party for the same project.
- 4.) Licensees shall make full disclosure and document to their employer and clients of any conflict of interest which could apply or appear to influence their judgment on significant issues.

- (a) 1, 4
- (b) 1, 3, 4
- (c) 1, 2, 3, 4
- (d) 1, 2, 4

13 pts.

- 13.) In the figure below, GLO dimensions are shown in parentheses. Existent corners are noted with darkened symbols. The coordinates shown (north over east, in feet) are your measured values. All other intervening corners have been declared lost. Compute the coordinates to reestablish the lost corner to Sections 5, 6, 7 and 8.

Compute the answer to the nearest 0.01 foot. On this sheet show all work that supports your solution. Partial credit (if warranted) will be awarded. Do not merely provide an answer. Show the work that resulted in the answer shown. If needed, place part of your solution on the back of this sheet. Write your answers in the box below.

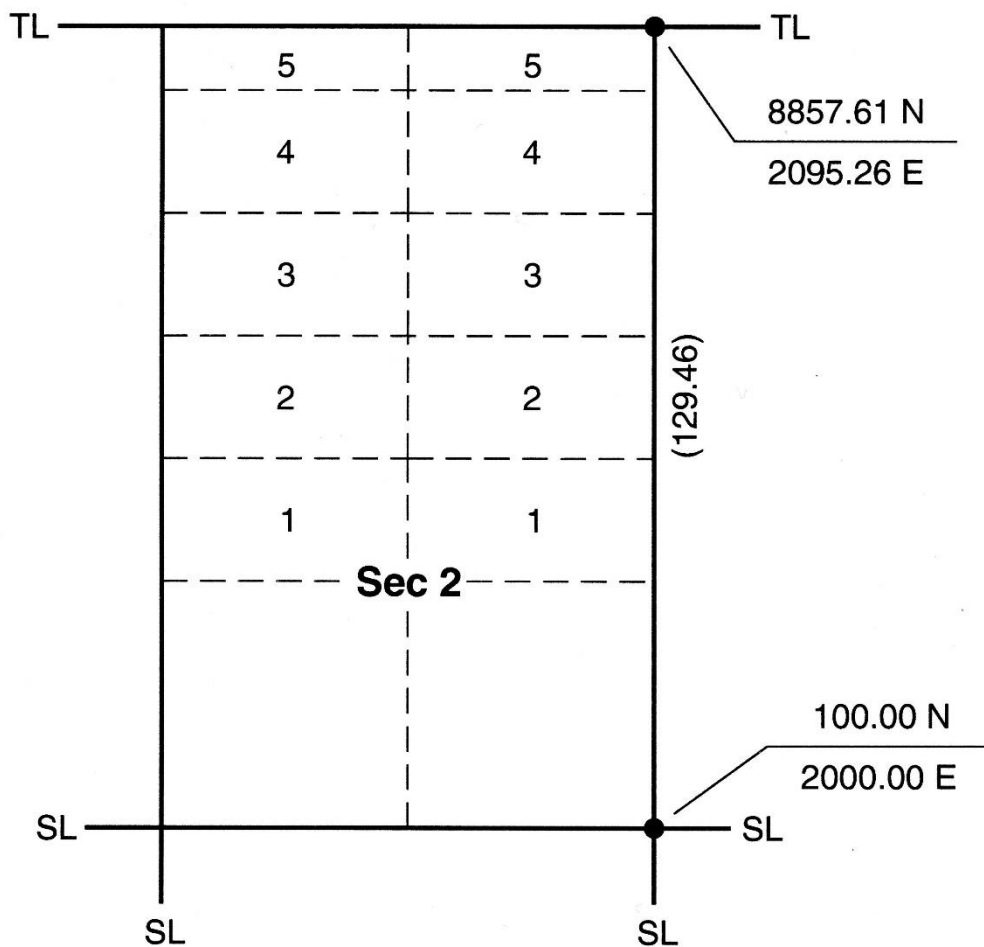


North =
East =

9 pts.

- 14.) In the figure below, GLO dimensions are shown in parentheses. Existent corners are noted with darkened symbols. The coordinates shown (north over east, in feet) are your measured values. All other intervening corners have been declared lost. Compute the coordinates of the southeast corner of Lot 2 of the Northeast Quarter of Section 2.

Compute the answer to the nearest 0.01 foot. On this sheet show all work that supports your solution. Partial credit (if warranted) will be awarded. Do not merely provide an answer. Show the work that resulted in the answer shown. If needed, place part of your solution on the back of this sheet. Write your answers in the box below.

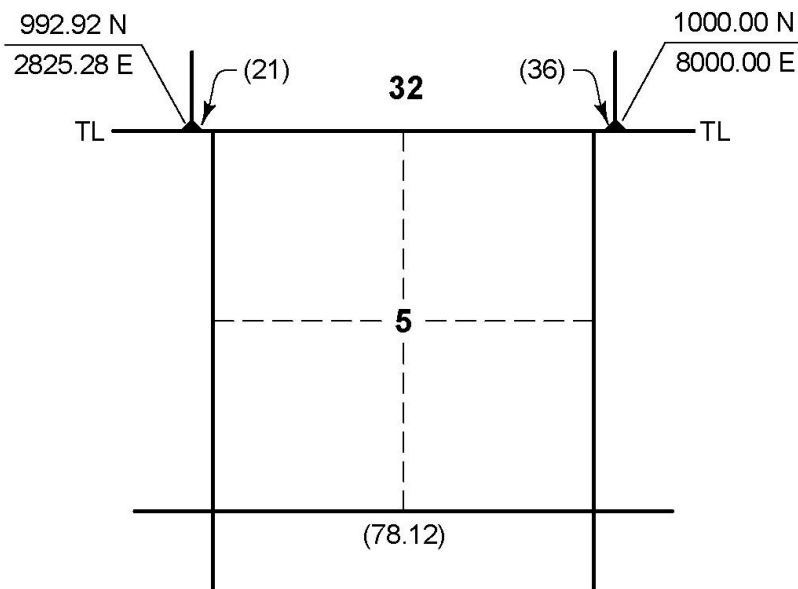


North =
East =

9 pts.

- 15.) In the figure below, GLO dimensions are shown in parentheses. Existent corners are noted with darkened symbols. The coordinates shown (north over east, in feet) are your measured values. All other intervening corners have been declared lost. Compute the coordinates of the North Quarter Corner of Section 5.

Compute the answer to the nearest 0.01 foot. On this sheet show all work that supports your solution. Partial credit (if warranted) will be awarded. Do not merely provide an answer. Show the work that resulted in the answer shown. If needed, place part of your solution on the back of this sheet. Write your answers in the box below.



North =
East =

## Answers and Solutions

- 1.) a
- 2.) d
- 3.) c
- 4.) d
- 5.) b
- 6.) c
- 7.) d
- 8.) c
- 9.) d
- 10.) c
- 11.) d
- 12.) c

- 13.) This is the reestablishment of a lost section corner in the interior of a township. The solution is by double proportioning. See 60.315(6) RSMo. This solution will be by proportioning coordinates.

First for the north coordinate. The reestablishment north-south position must be exactly two-thirds of the way from the corner of Sections 7, 8, 17 and 18 to the Quarter Corner of Sections 5 and 6. (Knowing the GLO dimension for the west side of Section 8 would be 80.00 chains and the GLO dimension for the west line of the Southwest Quarter of Section 5 would be 40.00 chains.) So:

Reestablished north coordinate position:

$$(8007.07 - 0.00) \frac{80.00}{120.00} + 0.00 = 5338.05 \text{ feet}$$

For the east coordinate. The reestablished east-west position must be exactly at the GLO proportioned dimension,  $40.00/(40.00+79.56)$  of the way from the quarter corner of Sections 6 and 7 to the Corner of Sections 4, 5, 8 and 9. So:

Reestablished east coordinate:

$$(9340.23 - 1567.67) \frac{40.00}{40.00+79.56} + 1567.67 = 4168.06 \text{ feet}$$

- 14.) This is the establishment of a lot corner. The solution is by single proportion (60.301(7,a) RSMo) between the Northeast and Southeast Corners of Section 2, the intervening Quarter Corner being lost. One must also know that the protracted distance for Lots 1 through 4 would be 20.00 chains and the protracted distance of the east line of Lot 5 would be 9.46 chains (knowing, of course the GLO dimension for the east line of the Southeast Quarter of Section 2 would be 40.00 chains). This solution will be by inverting between the existent corners' coordinates, then proportioning the measured distance, then computing the coordinate desired.

Inverting from the Southeast Corner to the Northeast Corner:

$N0^{\circ}37'24"E$       8758.13 *feet*

Proportion the distance:

$$\frac{60}{129.46} (8758.13) = 4059.07 \text{ feet}$$

Compute the coordinate,  $N0^{\circ}37'24"E$ , 4059.07 feet from the Southeast Corner of Section 2:

4158.83 *North*      2044.16 *East*

An alternate (and, perhaps more direct method) would be to merely proportion coordinates.

- 15.) This is the establishment of a “blank” quarter corner, in this case one south of a Township Line and not set in the GLO surveys. The solution applies 60.335 RSMo. One must also know the protracted distance for the north line, Northeast Quarter, Section 5 will be 39.06 chains, and that the GLO falling (or “lap”) distances will be in links. This solution will apply proportioning coordinates:

For the north coordinate:

$$(992.92 - 1000) \frac{39.42}{80.00} + 1000 = 996.51 \text{ feet}$$

For the east coordinate:

$$(2825.28 - 8000) \frac{39.42}{80.00} + 8000 = 5450.16 \text{ feet}$$

This solution uses, of course, the Southwest and Southeast corners of Section 32, there being no existent intervening corners.