

Surveying

Worksheet by the Merit Badge Center, Philippines



Last Updated: March 22, 2021

This worksheet was created to assist Scouts with their merit badge work. The worksheet does not replace the actual merit badge counseling process. A certified merit badge counselor for the badge must still certify your completion of each requirement and the merit badge. If a requirement says that you must take an action using words such as “discuss”, “show”, “tell”, “explain”, “demonstrate”, “identify”, etc. that is what you must do. **Merit badge counselors may not require the use of this worksheet or any similar material.** No one may add, subtract, or modify the official requirements for the merit badge as prescribed by the Boy Scouts of the Philippines.

Scout's Name: _____ Unit: _____

Requirement 1. Do one of the following:

- a. **From an initial point, measure by tape a range line north 100 meters, and south 100 meters. Using the same initial point and procedure, establish a baseline east 100 meters, and west 100 meters. Locate the main features of the area by compass readings and pace measurements from one or more stations along the range or base lines.**

Use page two for your surveying field notes.

Have your Merit Badge Counselor certify that you have completed this requirement.

Merit Badge Counselor's Signature

Date

- b. **Establish the corners of a lot describe as follows: from a point of beginning; thence running (1) north $16^{\circ} 30'$ east, 17.8 meters, thence (2) north 77° east, 20.5 meters; thence (3) south $49^{\circ} 30'$ east, 22.4 meters; thence (4) south 55° west, 30 meters; thence (5) north 60° west, 20 meters to the point of beginning. The error of closure must not exceed 1.5 meters. Locate the main features of the lot by compass readings and pace measurements from its corners.**

Use page two for your surveying field notes.

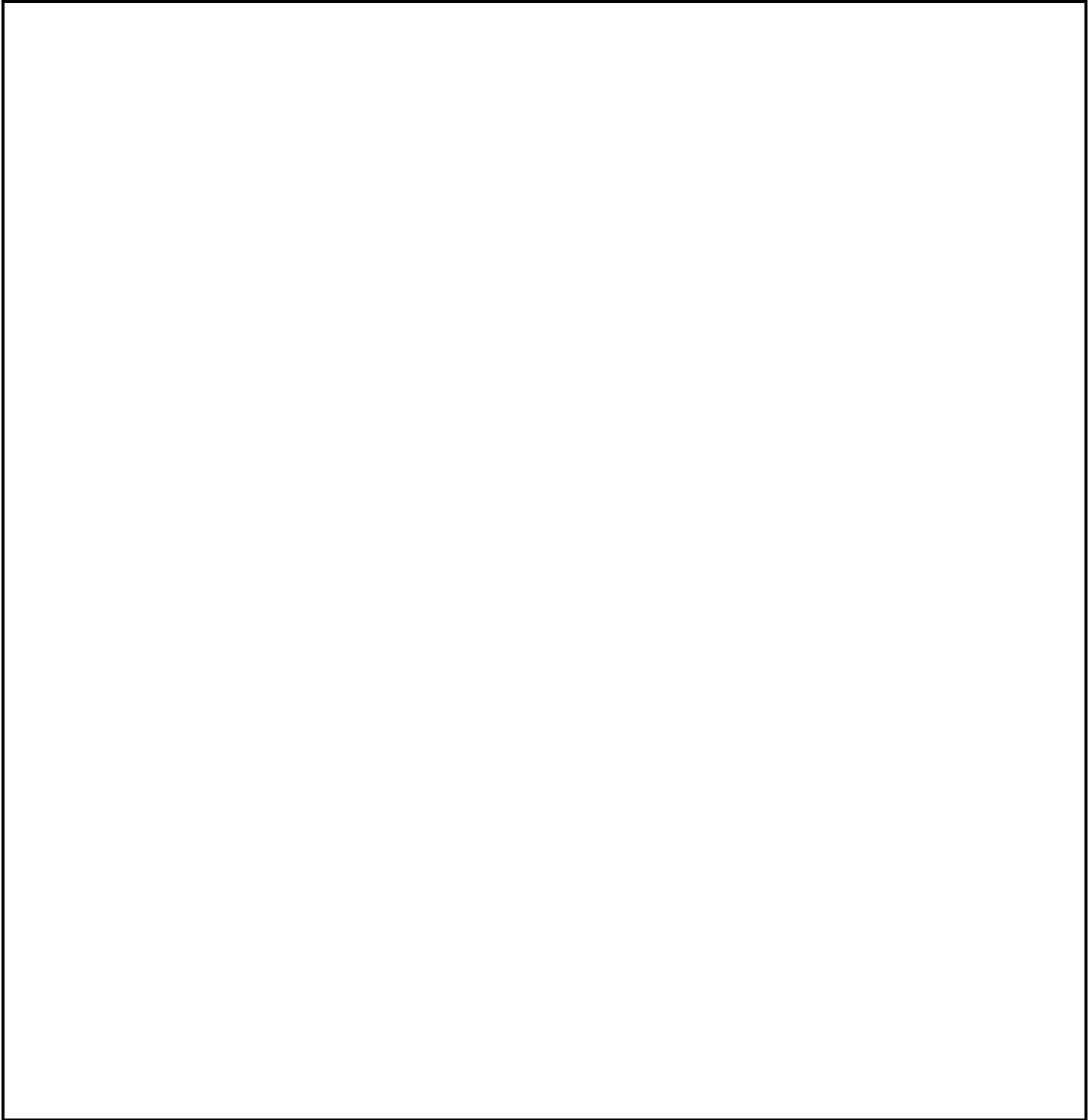
Have your Merit Badge Counselor certify that you have completed this requirement.

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Use this page for your surveying field notes for Requirement 1.

Requirement 2. From the field notes gathered from Requirement Number 1, draw a map to convenient scale. Submit a nearly drawn copy of the map to your Counselor.



Have your Merit Badge Counselor certify the completion of this requirement.

Merit Badge Counselor's Signature

Date

Requirement 3. Use the initial point or point of beginning as a benchmark with an assumed elevation of 30 meters to determine the elevation of four other points.

Points	Elevation	Other Information
Initial Point or Point of Beginning	30 Meters	
Point # 1		
Point # 2		
Point # 3		
Point # 4		

Have your Merit Badge Counselor certify the completion of this requirement.

Merit Badge Counselor's Signature Date

Requirement 4. Without traversing a distance of approximately 100 to 1,000 meters, determine its length by proper surveying methods, then tape the distance. Your figure must be within 5% of the taped measurement.

Length determined using proper surveying methods: _____

Length determined using tape measurement: _____

Percentage Difference: _____ (must be within 5%)

Have your Merit Badge Counselor certify the completion of this requirement.

Merit Badge Counselor's Signature Date

Requirement 5. Determine the height of a point by accepted surveying methods that can be checked by raising or lowering a tape. Your figure must be within 5% of the taped measurement.

Height determined using proper surveying methods: _____

Height determined using tape measurement: _____

Percentage Difference: _____ (must be within 5%)

Have your Merit Badge Counselor certify the completion of this requirement.

Merit Badge Counselor's Signature Date

