

Surveying I

Name: _____ **Key** _____

Date: _____

Question 1

Convert to U.S. Survey Feet

I. 4,129.574 m

$$4,129.574 \cdot (39.37 / 12) = 13,548.44 \text{ sft}$$

II. 640.137 m

$$640.137 \cdot (39.37 / 12) = 2,100.18 \text{ sft}$$

Question 2

Convert to meters

I. 537.52 sft

$$537.52 \cdot (12 / 39.37) = 163.84 \text{ m}$$

II. 4,809.34 sft

$$4,809.34 \cdot (12 / 39.37) = 1,465.89 \text{ m}$$

Question 3

What are the five types of measurements that form the basis of plane surveying

I. horizontal angles, horizontal distances, vertical angles, vertical distances, and slope distances.

Question 4

Determine the area in acres of the triangular lot having the following recorded right-angle sides

I. 220.36 ft and 440.02 ft

$$0.5(220.36)(440.02) / 43,560 = 1.1130 \text{ ac}$$

Question 5

Convert 487,300 sft²

I. acres

$$487,300 / 43,560 = 11.19 \text{ ac}$$

II. hectares

$$487,300(12 / 39.37)^2 / 10,000 = 4.527 \text{ ha}$$

Question 6

Convert to DMS and radians

I. 146.845 grads

$$146.845(0.01570796) = 2.30664 \text{ rad}$$

$$2.30664(180 / \pi) = 132.1607 = 132^\circ + (0.1607' \cdot 60) = 132^\circ 09.64' = 132^\circ 09' + (0.64'' \cdot 60) = 132^\circ 09' 38''$$