

Majmaah University

College of Engineering

Civil & Environmental Eng. Dept.

Surveying 1 (CE 370)

26/2/2019

Name:	Academic Number:
Level (5): Civil Engineering:	Time allowed: 15 min.

Question #1:

A steel tape with a nominal length of 30 m is used to measure the area of a piece of land. Its area was found as 24000 m². The used tape is calibrated and it was found that its length decreases by 4 cm of its nominal length. Find the true area of that land in hectare.

[ULO3/CLO#2 / e-kpi#17 =5marks]

Answer:

Nominal length of the tape = 30 m True length of the tape = 29.96 m

$$\frac{\text{True area}}{\text{Calculated area}} = \frac{(\text{True length of the tape})^2}{(\text{nominal length of the tape})^2}$$

$$\frac{\text{True area}}{24000} = \frac{(29.96)^2}{(30)^2}$$

True area of the piece of land = 23936.043 square meter = 2.394 hectare

Good Luck