

## CIVE 2004 GIS, Surveying, and Graphics

2013 Fall Term

### EXAMINATION

**MOCKUP - THIS IS NOT THE REAL EXAM, IT IS AN EXAMPLE**

<b>Duration: 2 hours</b>	<b>No. of Students:</b>
<b>Course Instructor: Mario SANTANA QUINTERO</b>	
<b>Authorized memoranda: accepted material: notebook and/or US letter size course notes, these might included print outs of the course lectures BUT only if they have written notes. Calculators are also accepted; this excludes mobile phones or other wireless devices with calculator functions.</b>	
<b>Students MUST count the number of pages in this examination question paper before beginning to write, and report any discrepancy to a proctor. The question paper has 3 pages</b>	
<b>This examination question paper MAYNOT be taken from the examination room</b>	
<b>In addition to this question paper, students require: an examination booklet.</b>	
Notes:	<ol style="list-style-type: none"> <li>1. Attempt all questions.</li> <li>2. All questions carry different grades.</li> <li>3. If doubt exists as to the interpretation of any question, the student is urged to make a clear statement of assumptions made.</li> </ol>

#### Part One

**Question 1.1 (5 Grades):** Indicate the different types of laser scanning and explain their differences in accuracy?

**Question 1.2 (20 Grades):** a) Explain how a leveling calculation is carried out between a benchmark and three different areas (points) across a site? b) Identify and describe the sources of error that one should pay attention to provide accurate results (measurements):

#### Part Two:

**Problem 2.1 (25 Grades):** The coordinates shown below were recorded during a closed-traverse survey and they were adjusted.

Station	East (m)	North (m)	Line	Horizontal distance	Departure	Latitude
101	5000	5000	101-102			
102	5500	5000	102-103			
103	5222	5554	103-101			

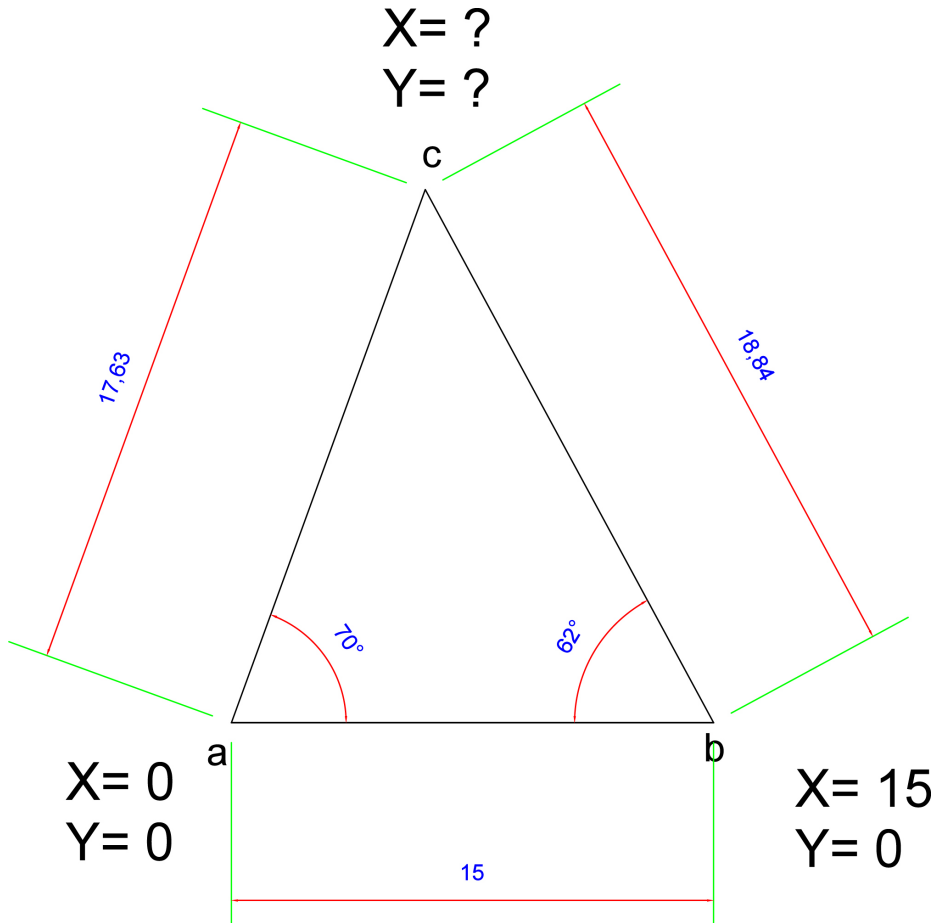
Use the table above to:

- a) Calculate the horizontal distances in meters between 101-102,102-103,103 -101

b) Calculate the DEP/LAT in meters between lines 101-102, 102-103, and 103-101.

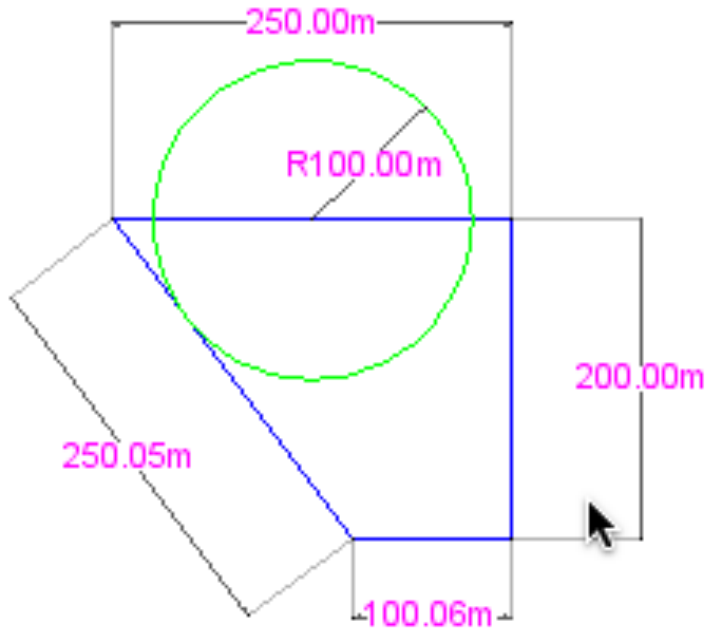
**Problem 2.2 (25 Grades):** Given the coordinates, distances and angle of “a”, “b” and “c”. Calculate:

- Coordinates of “c”;
- LAT of “ac” and DEP of “cb” in meters.



**Part three:**

**Practical problem 3.1 (20 Grades):** using AutoCAD commands, write down the steps to the following shape:



The starting point is 0,0

**Practical problem 3.2 (5 Grades):** Indicate the maximum measuring range (m) of a TS06 Leica Geosystems Total Station on NP EDM mode: