

# CVG 2171 – Surveying and Measurements

## Assignment # 5 – Traverse Computations

Due Date: February 26, 2018 @ the beginning of the lecture

Name: \_\_\_\_\_

Student No.: \_\_\_\_\_

**Notes:**

\*\*Make sure to read each question carefully and show all intermediate steps.

**Problem 1**

Balance the following interior angles (angles-to-the-right) of a five sided closed polygon traverse given the following information. Calculate the azimuths of the remaining sides. Note that line BC bears SE.

$$\text{Azimuth of line AB} = 218^{\circ}59'30''$$

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
132°47'06"	108°46'18"	107°19'37"	81°50'36"	109°16'18"

**Problem 2**

Compute departures and latitudes, linear misclosure, and relative precision for the traverse problem above if lengths of the sides (in feet) are as follows:

<i>AB</i>	<i>BC</i>	<i>CD</i>	<i>DE</i>	<i>EA</i>
202.74	283.87	498.37	320.33	380.78

### **Problem 3**

Using the compass (Bowditch) rule adjust the departures and latitudes of the traverse given in the previous problem. Given the coordinates at A, calculate (a) coordinates for the other stations (b) the lengths and bearings of lines BC and CD, and (c) the final adjusted angles at B and C.

<i>A</i>	
$X = 20,000.00 \text{ ft.}$	$Y = 15,000.00 \text{ ft.}$

### **Problem 4**

Compute the linear misclosure, relative precision, and adjusted lengths and azimuths for the sides after the departures and latitudes are balanced by the compass rule in the following closed-polygon traverse:

<b><i>Course</i></b>	<b><i>Length (m)</i></b>	<b><i>Departure (m)</i></b>	<b><i>Latitude (m)</i></b>
<i>AB</i>	412.516	-216.2394	-351.2975
<i>BC</i>	513.185	+512.9654	+15.0112
<i>CA</i>	448.495	-296.7364	+336.2964