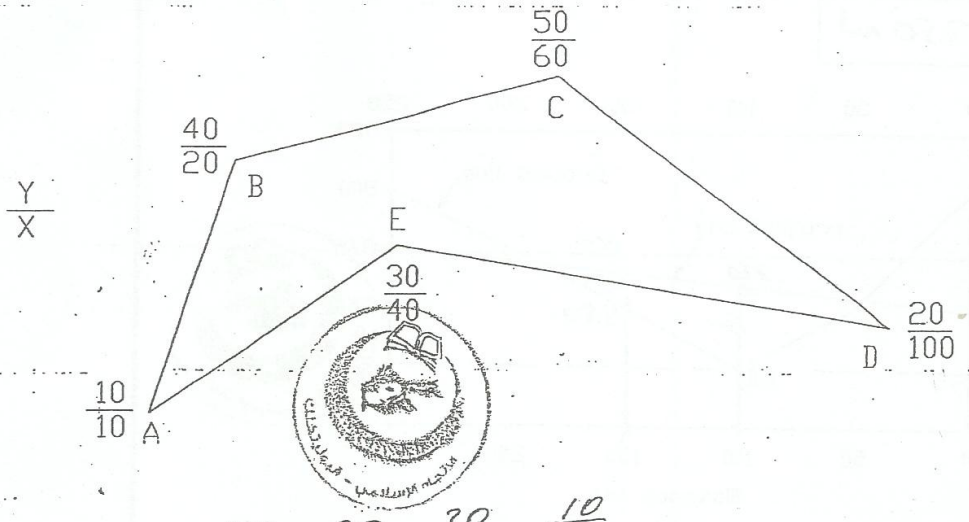
URDAY		SURVEYING
e :11-12-2010		2nd EXAM
IDENT I.D:		TIME : 50 MINUTES

(8 points): Compute the area of the traverse ABCDE.

Area of ABCDE=	



$\frac{10}{10}$ $\frac{40}{20}$ $\frac{50}{60}$ $\frac{20}{100}$ $\frac{30}{40}$ $\frac{10}{10}$

$A_1 = 10 \cdot 20 + 40 \cdot 60 + 50 \cdot 100 + 20 \cdot 40 + 30 \cdot 10 = 8700$

$A_2 = 10 \cdot 40 + 20 \cdot 50 + 60 \cdot 20 + 100 \cdot 30 + 40 \cdot 10 = 6000$

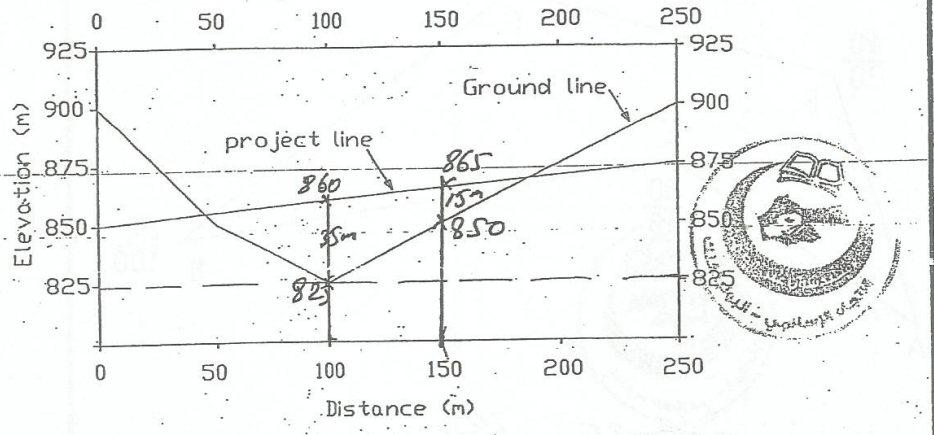
$A = \frac{8700 - 6000}{2} = 1350 m^2$

GOOD LUCK

SATU:		SURVEYING
Date :11-12-2010		2nd EXAM
STUDENT I.D:		TIME : 50 MINUTES

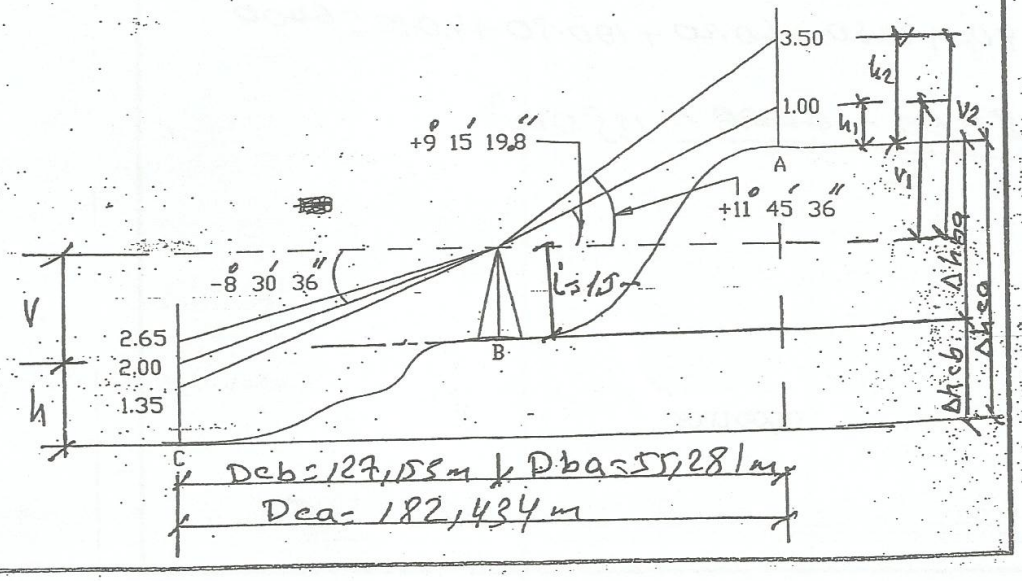
Q_1(6 points): Given the following profile, compute the volume of fill between station 100 and station 150 ,if the width of the road = 14 m and the side slope is 1:1 .

Volume =	53750 m³



Q_2 (8 points): Given the following measurements if the reduced level of A is (117.892 m), K=100, and C=0. Compute the slope of the line AC.

Slope AC=	1:0,1591
	15,91 %



Nam...
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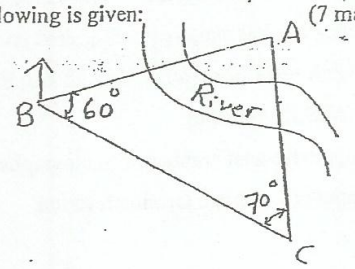
...ineering
Technology
Department of Civil Engineering

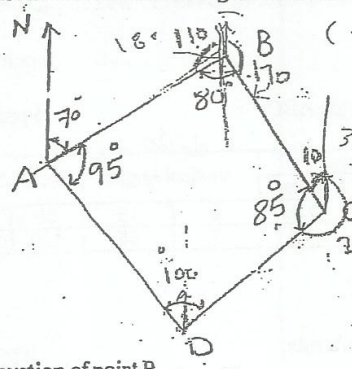
Question1: (7 marks)

Compute the coordinates of point A, if the following is given:
B (1000, 1000), C (1500, 800)



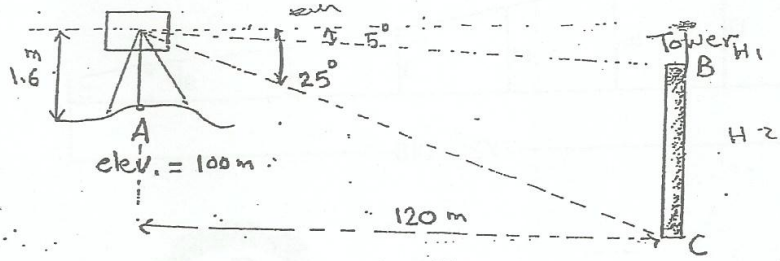
Question2: (7 marks)

Compute the Azimuth and the reduced bearing for each line of the shown traverse:

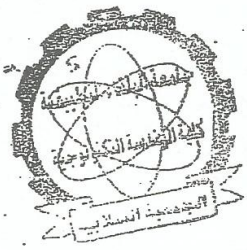


Question3: (7 marks)

Compute the
1-elevation of point B.
2-elevation of point C.
3-height of the tower.



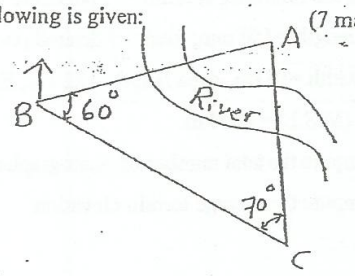
Best wishes,



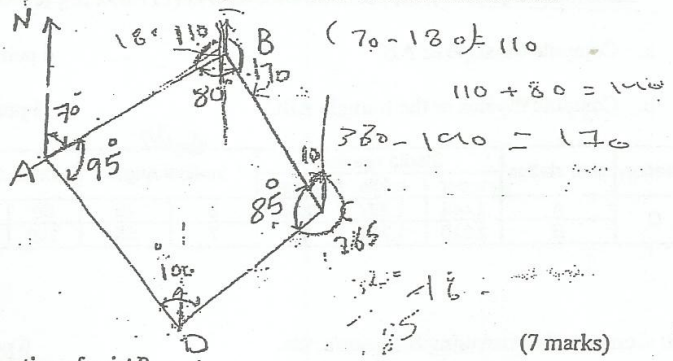
Nam...
ID:

...gineering
Technology
Department of Civil Engineering

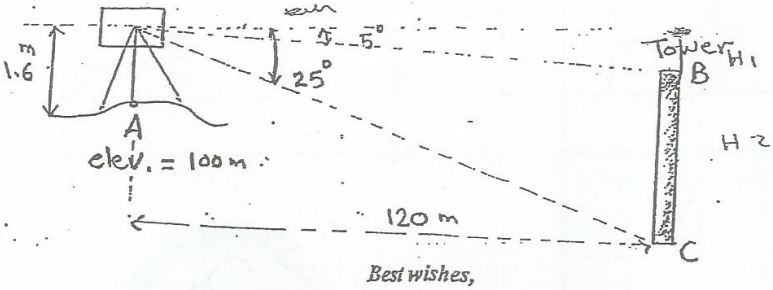
Question1:
Compute the coordinates of point A, if the following is given: (7 marks)
B (1000, 1000), C (1500, 800)



Question2: (7 marks)
Compute the Azimuth and the reduced bearing for each line of the shown traverse:



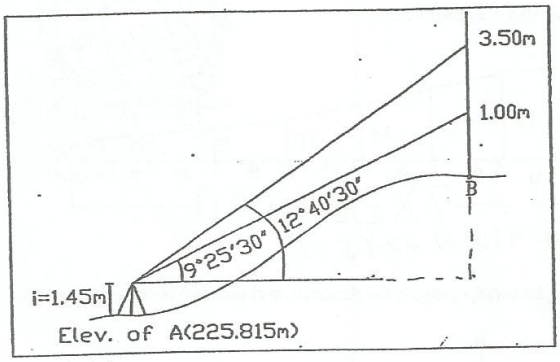
Question3: (7 marks)
Compute the
1-elevation of point B.
2-elevation of point C.
3-height of the tower.



Best wishes,

TUESDAY		SURVEYING
DATE : 23-04-2009		SECOND EXAM
STUDENT I.D:		TIME : 50 MINUTES

Q4: Compute the horizontal distance AB and the elevation of B. **7 points**



$$D = \frac{5}{\tan(12°40'30") - \tan(9°25'30")} = \frac{2.5}{\tan(12°40'30") - \tan(9°25'30")}$$

$$\tan(1) \quad \tan(1)$$

$$D = 42.44$$

$$V = 42.44 \tan(9°25'30") = 7.04$$

$$B_{elev} = H_A + V - 2^{nd}$$

$$= 225.815 + 7.04 - 1 =$$

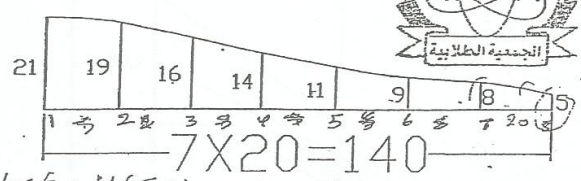
$$= 231.855$$

GOOD LUCK

TUESDAY		SURVEYING
DATE : 28-04-2009		SECOND EXAM
STUDENT I.D:		TIME : 50 MINUTES

Answer three questions

Q1: Compute the Area using Simpson's rule. 7 points

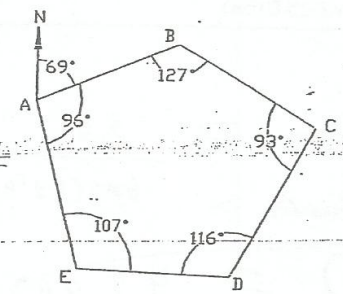


$= \frac{x}{3}(1^{st} + 6^{st} + 4(\Sigma 11) + 2(\Sigma 1))$

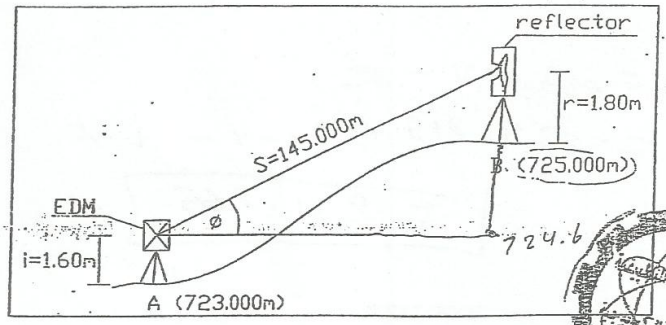
Q2: Given the following traverse, compute the Azimuth and reduced bearing of line CD. 7 points

$A_{2AB} = 69°$

$BA_{2AB} = 180 + 69 =$



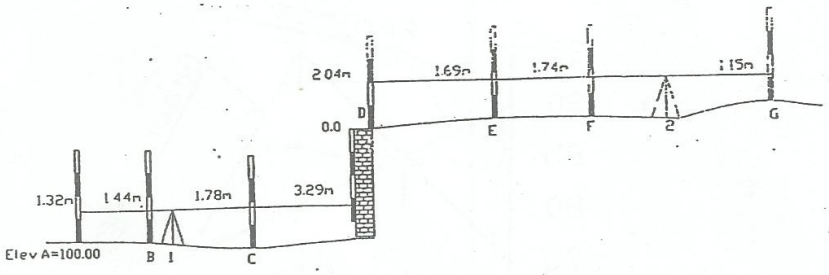
Q3: Compute the horizontal distance AB and the vertical angle Ø. 7 points



SUNDAY:- 09-08-2009		SURVEYING
TIME : 100 MINUTES		FINAL EXAM
STUDENT NAME:		ENG. ALI MAHAMED

Q1: Given the following measurements with the staff vertical on earth, if the height of the instrument is (1.50 m), the elevation of A is (100.00 m).

Compute the elevation of B, C, D, E, F and G. Perform the arithmetic check. 15 points



Q2: Given the following measurements with the staff vertical on earth, if the height of the instrument is (1.50 m), the reduced level of C is (117.892 m), K=100, and C=0.

Compute the slope of AB 12 points

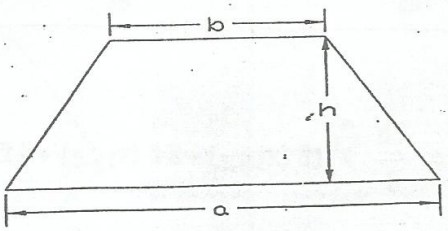
Compute the area or the triangle ABC. 3 points

Station	staff station	Stadia reading			vertical Angle		Horizontal Angle Reading		
		upper	midle	lower					
C	A	2.444	1.897	1.35	12	15	60	0	0
	B	2.316	1.708	1.1	16	55	158	15	45

Q3: A trapezoidal area was measured as follows:

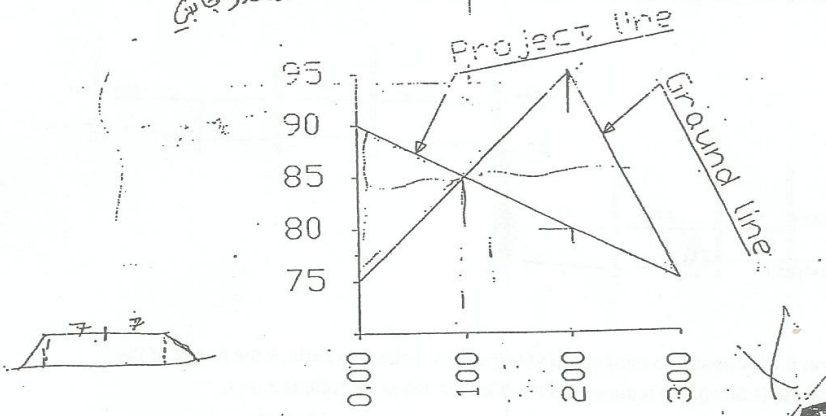
a = 185.7± 0.3 m, b = 120.6 ± 0.4 m and h = 22.3 ± 0.2 m.

Compute the standard error of the area. [10 points]

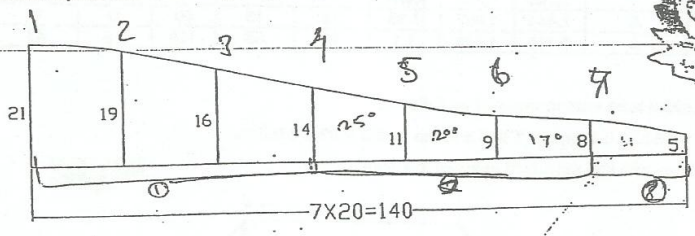


SUNDAY:- 09-08-2009		SURVEYING
TIME : 100 MINUTES		FINAL EXAM
STUDENT NAME:		ENG. ALI MAHAMIED

Q4: Given the following profile, compute the volume of the earthwork if the width of the road = 14 m and the side slope is 1:1 — 10 points



Q5: Compute the Area using (3/8) Simpson's rule. — 5 points



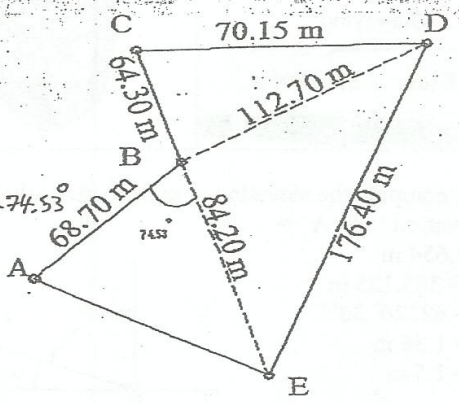
$$SC(f,h) = \frac{3h}{8}\sum_{k=1}^{m}\left(f(x_{1k-1}) + 3f(x_{1k-1}) + 3f(x_{1k-1}) + f(x_{1k})\right)$$

GOOD LUCK

$A_2 = \frac{8+5}{2} \times 20 = 130$

$A_1 = \frac{3 \times 20}{8}\left(9 + 3(14+8)\right)$

Q2: Compute the area of ABCDE
(6 points)



$A_{(ABE)} = \frac{1}{2} * 68.70 * 84.20 * \sin 74.53°$

$= 2787.5 \text{ m}^2$

$A_{(BCD)} = \sqrt{S(S-b)(S-c)(S-d)}$

$S = \frac{70.15 + 112.7 + 64.3}{2} = 123.6$

$= \sqrt{123.6(123.6-70.15)(123.6-112.7)(123.6-64.3)}$

$= 2066.4 \text{ m}^2$

6

$A_{(BDE)} =$ $S = \frac{112.7 + 176.4 + 84.2}{2} = 186.65$

$= \sqrt{186.65(186.65-112.7)(186.65-176.4)(186.65-84.2)}$

$= 3807.16 \text{ m}^2$

$A_{(ABCDE)} = 2787.5 + 2066.4 + 3807.16$

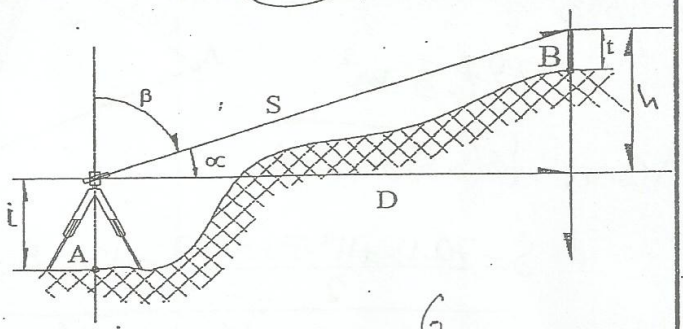
$= 8661.06 \text{ m}^2$

Surveying		Faculty of Engineering Technology
Second Exam 3/5/2010		Department of Civil Engineering
Name: [redacted]		

2.0

Q1: compute the elevation of point B given that: (6 points)

Elevation of A = 102.654 m
D = 305.125 m
β = 62° 20` 30``
i = 1.56 m
t = 1.5 m



6

$\tan\alpha = \frac{h}{D} \Rightarrow h = D \tan\alpha$

$= 305.125 * \tan 27° 39' 30''$

$= 159.9$ m

$elev(B) = elev(A) + i + (h - t)$

$= 102.654 + 1.56 + (159.9 - 1.5)$

$= 262.614$ m

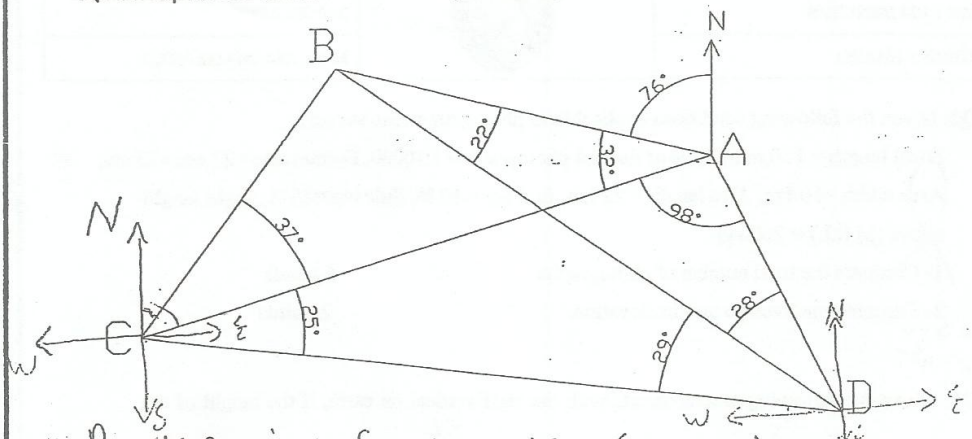
$\alpha = 90 - \beta$

$= 90 - 62° 20' 30''$

$= 27° 39' 30''$

جامعة البلقاء التطبيقية
كلية الحسبة التكنولوجية
الجمعية الطلابية

Q3: Compute the azimuth and reduced bearing of CB, CA and DC. (8 points)



Back Bearing of CA = 360 − (76+32) = 252

① $AZ_{CA} = 252 - 180 = 72$

② $AZ_{CB} = 72 - 37 = 35$

Back Bearing of DC = 72 + 25 = 97

③ $AZ_{DC} = 180 + 97 = 277$

* Reduced Bearing

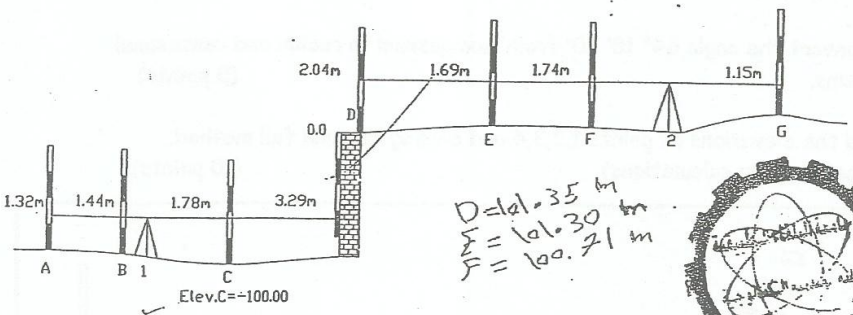
① CB : N 35° E

② CA : N 72° E

③ DC : ~~S 83° E~~ N 83° W

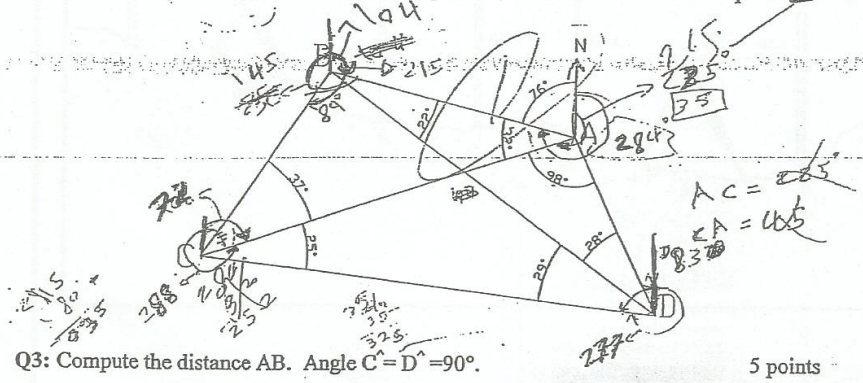
SA[illegible]AY :11-07-2009		SURVEYING
TIME : 50 MINUTES		FIRST EXAM
STUDENT I.D[illegible]		ENG. Ali Mahamied

Q1: Using heights of instrument method compute the elevations of B, A, D, E, F and G.
Given that: height of the instruments is (1.60 m), the elevation of C is (-100.00 m).
Perform the arithmetic check. 9 points

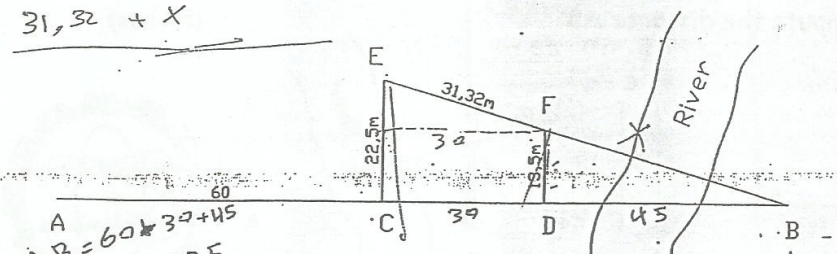


D = 101.35 m
E = 101.30 m
F = 100.71 m

Q2: Compute the azimuth and reduced bearing of BC, CA and DC. 6 points



Q3: Compute the distance AB. Angle C^ = D^ = 90°. 5 points



AB = 60 + 39 + 45
AB = 135

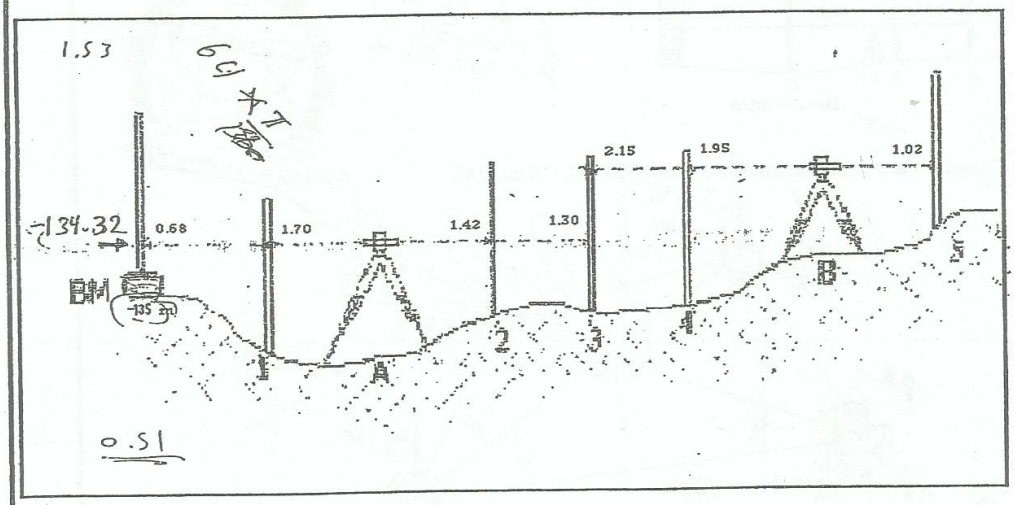
GOOD LUCK

(BD) / (BD) = 13.5 / 22.5

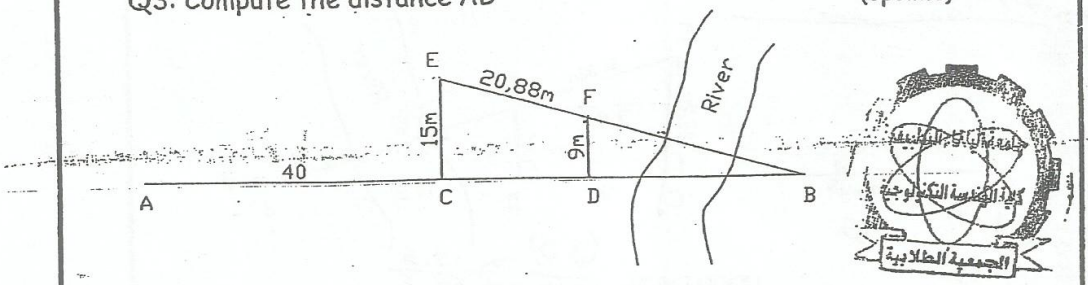
Surveying		Faculty of Engineering Technology
First Exam . 22/11/2009		Department of Civil Engineering
Name:		Eng. Ibrahim Khliefat

Q1: a- Define the following:-
Cartography, Millieme System, Goied , Ellipsoid, Trigonometric Leveling, Begs .
b- Convert the angle 64° 18' 20" from sexagesimal to radian and centesimal systems. (5 points)

Q2: Find the elevations of points 1,2,3,4 and 5 using rise and fall method.
(Tabulate your calculations) (10 points)



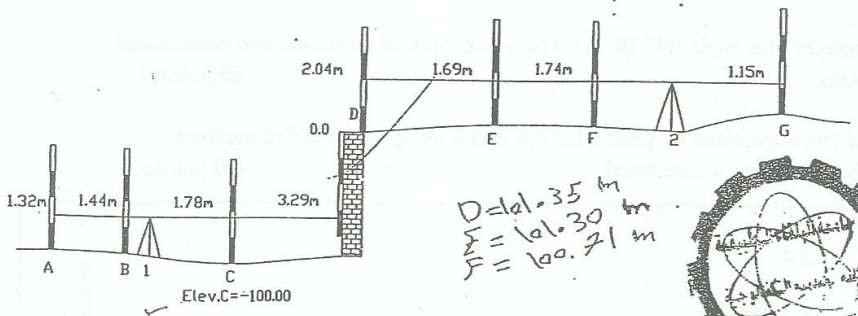
Q3: Compute the distance AB (5points)



GOOD LUCK

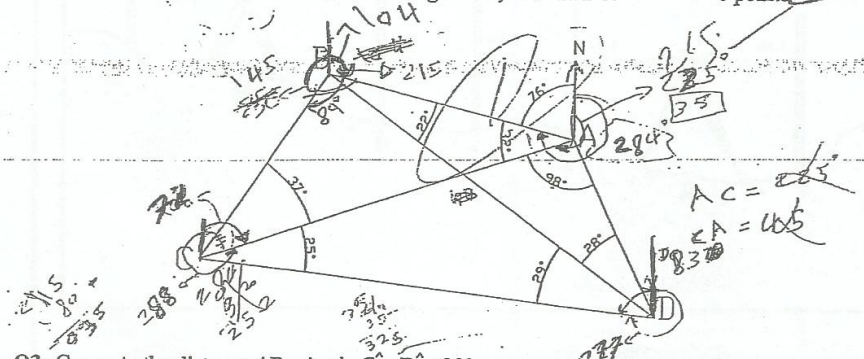
SA[illegible]\Y :11-07-2009		SURVEYING
TIME : 50 MINUTES		FIRST EXAM
STUDENT LD[illegible]		ENG. Ali Mahamied

Q1: Using heights of instrument method compute the elevations of B, D, E, F and G.
Given that: height of the instruments is (1.60 m), the elevation of C is (-100.00 m).
Perform the arithmetic check. 9 points

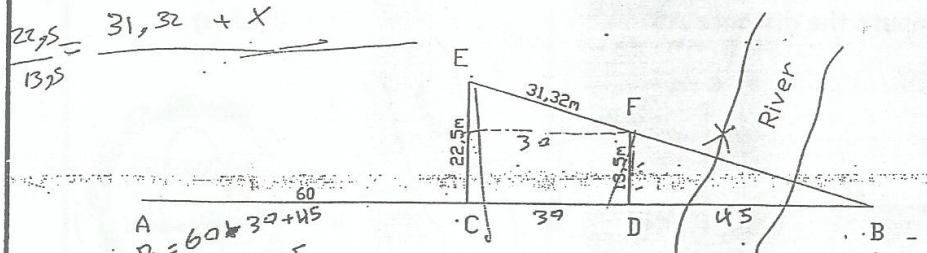


D=101.35 m
E=101.30 m
F=100.71 m

Q2: Compute the azimuth and reduced bearing of BC, CA and DC. 6 points



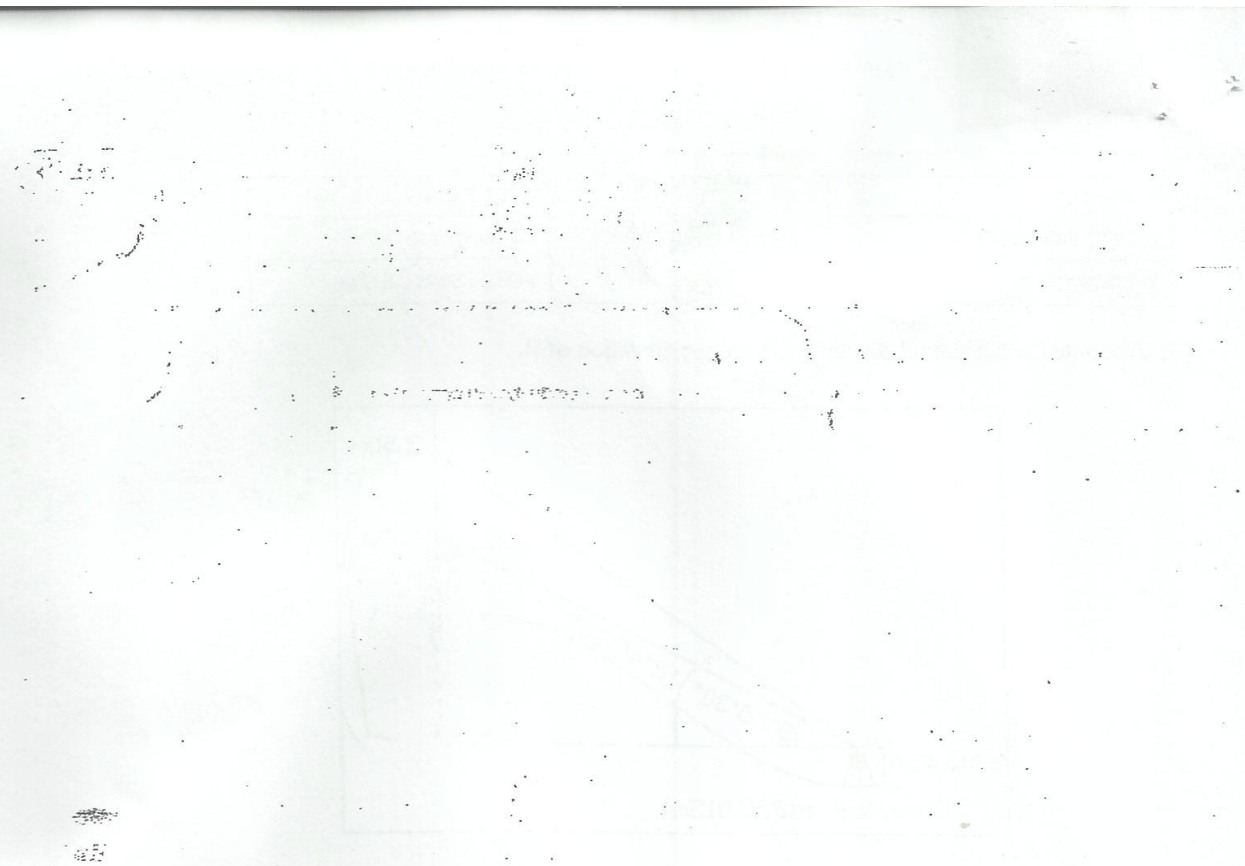
Q3: Compute the distance AB. Angle C^ = D^ = 90°. 5 points



AB = 60 + 30 + 45
AB = 135

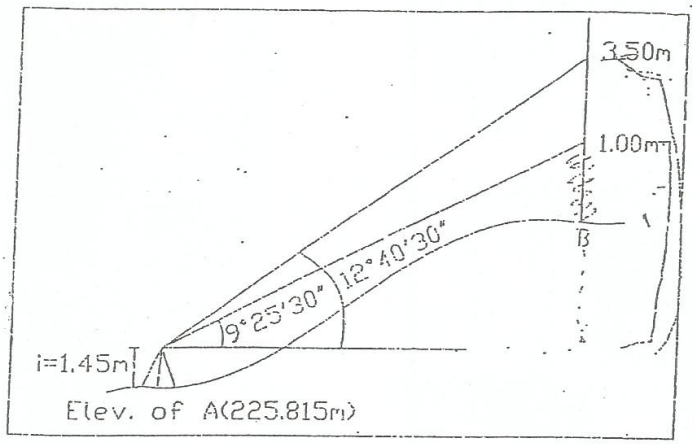
GOOD LUCK

(BD)/(BD) = 13.5/22.5



TUESDAY		SURVEYING
DATE : 28-04-2009		SECOND EXAM
STUDENT I.D:		TIME : 50 MINUTES

Q4: Compute the horizontal distance AB and the elevation of B. 7 points



GOOD LUCK

Final Exam 2009		Engineering Technology Faculty
Name: ID:		Civil Engineering Department Time: 100 minutes

Question1: (10 points)

A total station was set up at a control station K, that is outside a three sided property, coordinates of control station K is (1000, 1000). Azimuth angles and distances to the three property corners were determined as follows:

Direction	Azimuth	Horizontal Distance (m)
KA	40° 15'	40.60
KB	105° 30'	65.14
KC	175° 45'	78.16

a) Compute the coordinates to the property corners A, B and C

b) Compute the area of ABC

Question 2: (15 points)

A line AB was divided into three sections. The three sections were measured as follows:

Section	Length(m)	Estimated Standard Error
AC	186.65	± 0.04 m
CD	215.84	± 0.05 m
DB	105.16	± 0.03 m

a) Compute the length of line AB and its standard error

b) Compute the accuracy ratio.

Final Exam 2009	Engineering Technology Faculty
Name: ID:	Civil Engineering Department Time: 100 minutes

Question 3: (10 points)

A closed traverse ABCDA with the following lengths and bearings:

Line	Length(m)	Bearing
AB	260.51	N 31° 15' E
BC	325.18	N 79 ° 25' E
CD	520.64	S 25 ° 45' W
DA	?	?

Compute the length of DA and its reduced bearing.

Question 4: (15 points)

To determine the distance between two points C and D and their elevations, the following observations were taken upon a vertically held staff from two traverse stations A and B the constants of the theodolite being 100 and zero.

Traverse station	Height of instrument(m)	Coordinates(m) X	Y	Staff station	Bearing	Vertical Angle	Staff reading (m)		
A	1.6	900	800	C	N 30° W	+10° 20'	2.25	2.85	3.45
B	1.5	1200	1000	D	N 30° E	-15° 30'	2.20	2.85	3.50

Compute the following:

1-The distance CD.

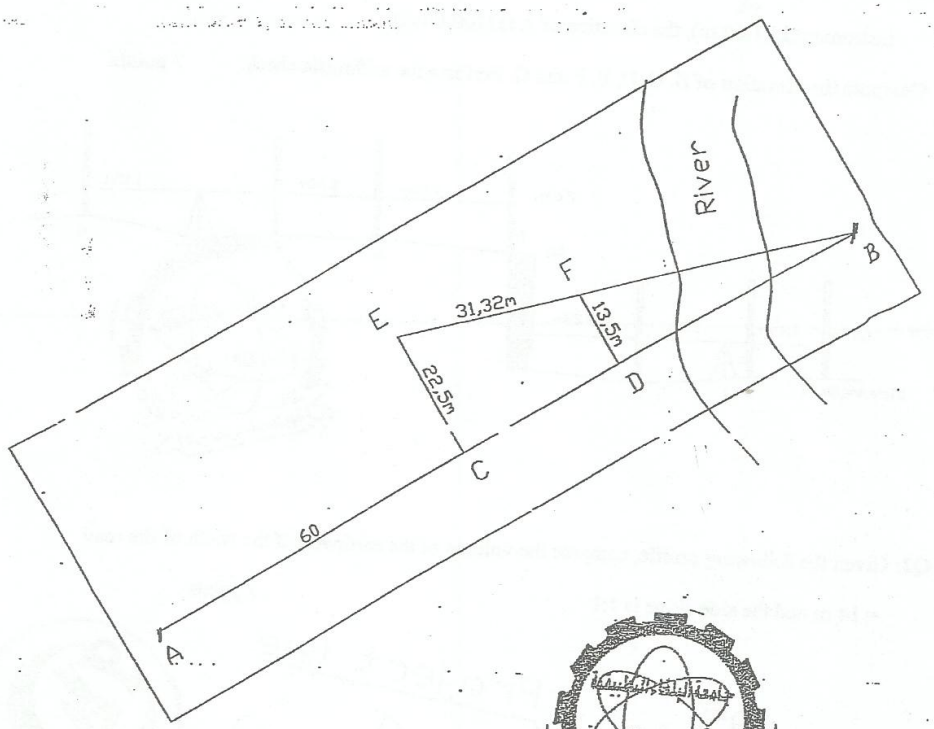
2-The elevations of C and D if those of A and B are 425 m and 430 m respectively.

3-The gradient from C to D.

GOOD LUCK

Wednesday		SURVEYING
DATE : 18-03-2009		FIRST EXAM
STUDENT I.D:		TIME : 50 MINUTES

Q3: Compute the distance AB .$\hat{C} = \hat{D} = 90°$. 6 points

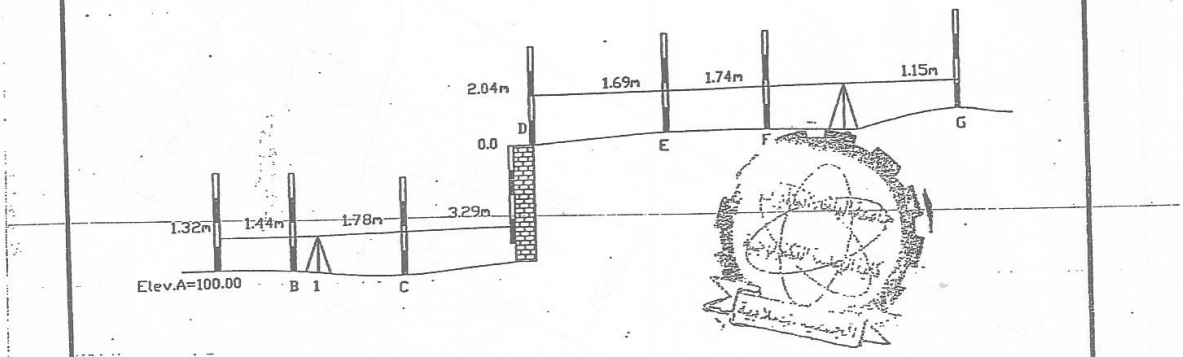


GOOD LUCK

ay		SURVEYING
TE : 18-03-2009		FIRST EXAM
STUDENT I.D:		TIME : 50 MINUTES

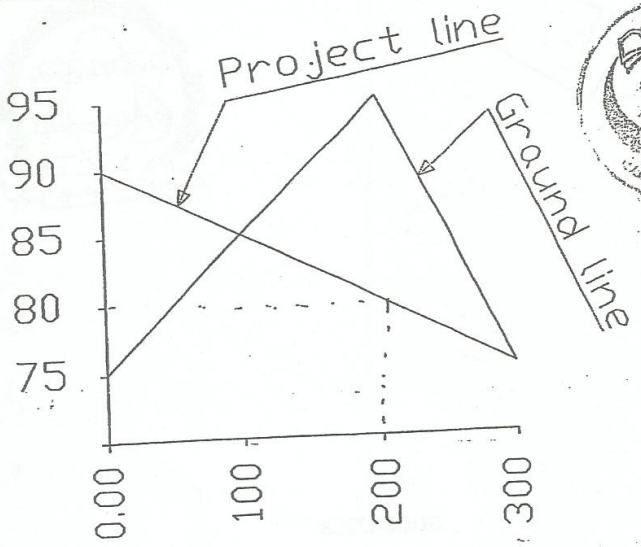
Q1: Given the following measurements with the staff vertical on earth, if the height of the instrument is (1.60 m), the elevation of A is (100.00 m).

Compute the elevation of B, C, D, E, F and G. Perform the arithmetic check. 7 points



Q2: Given the following profile, compute the volume of the earthwork if the width of the road = 14 m and the side slope is 1:1

7 points



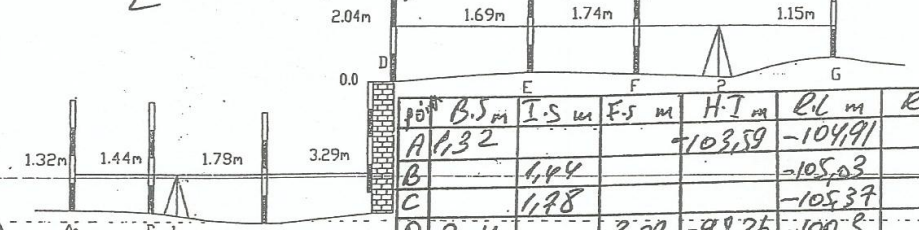
امتحان عام (1)

SATURDAY		SURVEYING
Date:30-10-2010		FIRST EXAM
STUDENT I.D:		TIME : 50 MINUTES

Q1: Using heights of instrument method compute the elevations of A,B, C, D, E, and G. The elevation of F is (-100.00 m). Perform the arithmetic check. 15points

(3) مجموع الخلفيات − مجموع الأماميات = (مجموع حاصل ضرب المسافات × الفروق) = الفرق بين منسوب آخر نقطة − منسوب أول نقطة

$-610,06 = [(103,59 - 98,26) - 6,65 - (-2,14)] = -610,06$ OK.



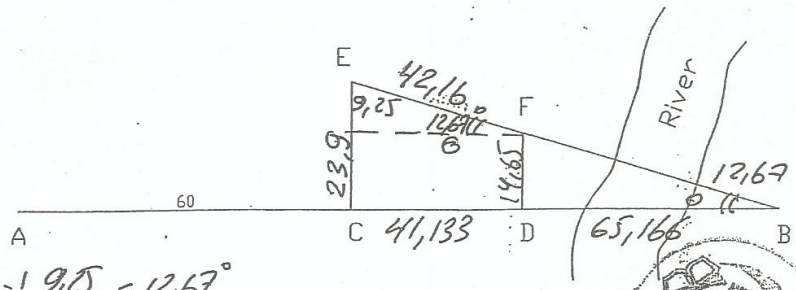
Point	B.S m	I.S m	F.S m	H.I m	R.L m	Rem.
A	1,32			103,59	-104,91	
B		1,44			-105,03	
C		1,78			-105,37	
D	2,04		3,29	98,26	-100,5	
E		1,69			-99,95	
F		1,74			-100	
G			1,15		-99,41	
Σ	3,36	6,65	-2,14			

(2) مجموع الخلفيات − مجموع الأماميات = (1)

$3,36 - (-2,14) = 5,5$

$-99,41 - (-104,91) = 5,5$ (2)

Q2: Compute the distance AB if the angle $C\hat{} = D\hat{} = 90°$, CE=23.90, ER=42.16 and ED= 14.65 m. 5 points



$\theta = \sin^{-1}\frac{9,25}{42,16} = 12,67°$

$CD = 42,16 \cos 12,67 = 41,133 m.$

$DB = \frac{14,65}{\tan 12,67} = 65,166 m$

$AB = 60 + 41,133 + 65,166 = 166,299 m$

$DB = \frac{14,65 \cdot 41,133}{23,9 - 14,65} = 65,146 m.$

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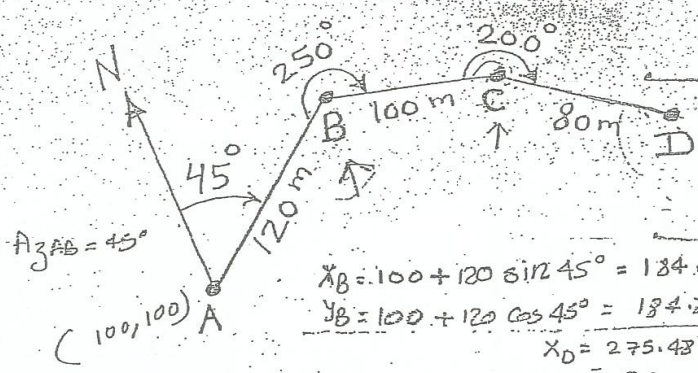
$AB = 60 + 41,133 + 65,146 = 166,279 m$

Q4) Required (see the following figure):

$A_{zCD} = A_{zCB} + R_{CD} - R_{CB}$
$= 115 + 180 + 200$
$= 135°$



$X_C = 184.85 + 100 \times \sin A_{zBC}$
$= 275.48\ m$
$y_C = 184.85 + 100 \cos 115$
$= 142.59\ m$

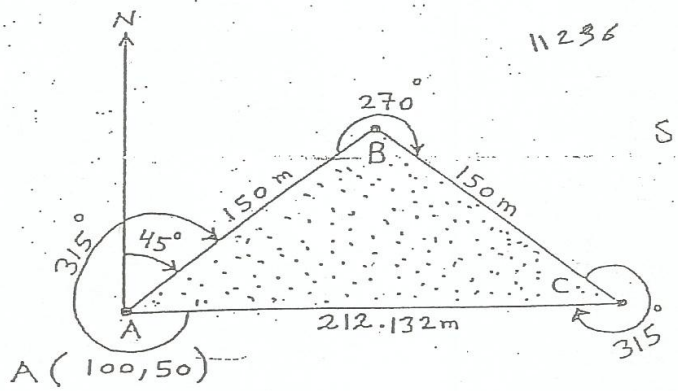
$X_B = 100 + 120 \sin 45° = 184.85\ m$
$Y_B = 100 + 120 \cos 45° = 184.85\ m$

$X_D = 275.48 + 80 \sin 135$
$= 332.048\ m$
$Y_D = 142.59 + 80 \cos 135 = 87.02\ m$

$X_D = ?$, $Y_D = ?$

332.048 86.019 (١٠ علامات)

Q5) Required (see the following figure):



11236

$S = 256.07$ 212.132
$\times 106.07$
$\times 106.07$
$\times 43.938$
$= 11254.024\ m^2$

Area enclosed by the triangle ABC=?

$[S((S-a)(S-b)(S-c))]^{\frac{1}{2}}$ (١٠ علامة)

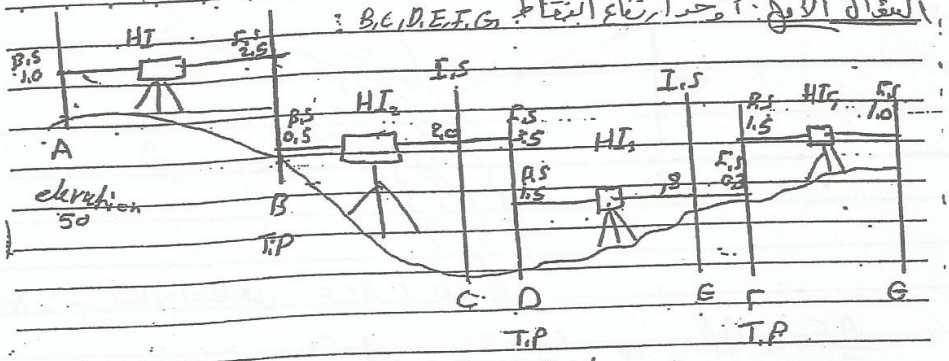
حيث $S = \frac{a+b+c}{2}$

الهندسة المدنية
بكالوريوس
الامتحان الأول

أ. القروش

first نموذج أسئلة مساحة

السؤال الأول: أوجد ارتفاع النقاط B,C,D,E,F,G :



Truning point: B.S/F.S خط يكون عليه

I.S: (Intermiedia Side) خط وسط (B.S و F.S) بين

$HI_1 = 50 + 1.0 = 51$ ∴ elevation B = 51 − 2.5 = 48.5

$HI_2 = 48.5 + 0.5 = 49$ ∴ elevation C = 49 − 2 = 47

$HI_3 = 45.5 + 1.5 = 47$ ∴ elevation d = 49 − 3.5 = 45.5

$HI_4 = 46.7 + 1.5 = 48.2$ ∴ elevation E = 47 − .8 = 46.2

∴ elevation F = 47 − 0.3 = 46.7

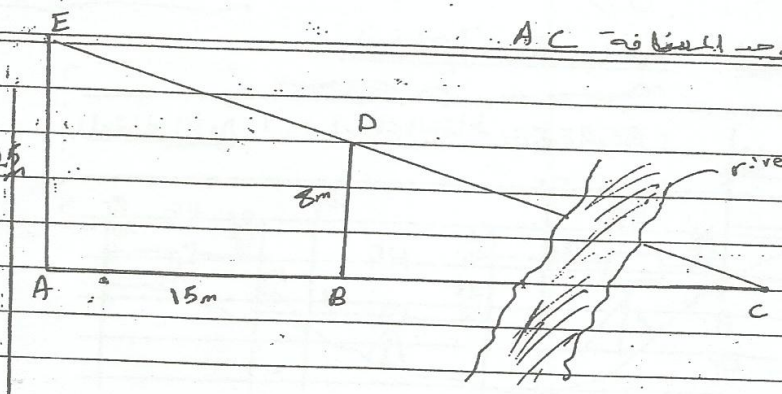
∴ elevation G = 48.2 − 1.0 = 47.2

Point	B.S	I.S	F.S	H.I	elevation	Distan	Note
A	1.0			51	50		B.M.
B	0.5		2.5	49	48.5		T.P
C		2.0			47		
D	1.5		3.5	47	45.5		T.P
E		.8			46.2		
F	1.5		0.3	48.2	46.7		T.P
G			1.0		47.2		
	Σ = 4		7.3				

~ أحمد بني مفرج ~

مؤسسة ديما وليث للخدمات المطبعية 0799566267 - 0799516451

السؤال الثاني : أوجد المسافة AC



الحل : من تشابه المثلثين $BCD \sim ACE$

$$\frac{AC}{BC} = \frac{AE}{BD} \Rightarrow \frac{AB+BC}{BC} = \frac{AE}{BD}$$

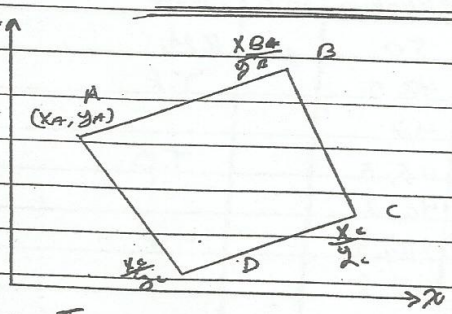
$$\frac{15+BC}{BC} \times \frac{25}{8} \qquad 8(15+BC) = 25BC$$

$$120 + 8BC = 25BC \Rightarrow 25BC - 8BC = 120$$

$$\frac{17}{17}BC = \frac{120}{17} \Rightarrow \boxed{BC = 7,05\ m}$$

$$AC = AB + BC \Rightarrow 15 + 7,05 = \{22,05\}\ m \quad \#$$

السؤال الثالث : أوجد مساحة الشكل



$$A = \frac{1}{2}\left(\left[\frac{x_A}{y_A}\ \frac{x_B}{y_B}\ \frac{x_C}{y_C}\ \frac{x_D}{y_D}\right] - \left[\frac{x_B}{y_A}\ \frac{x_C}{y_B}\ \frac{x_D}{y_C}\ \frac{x_A}{y_D}\right]\right)$$

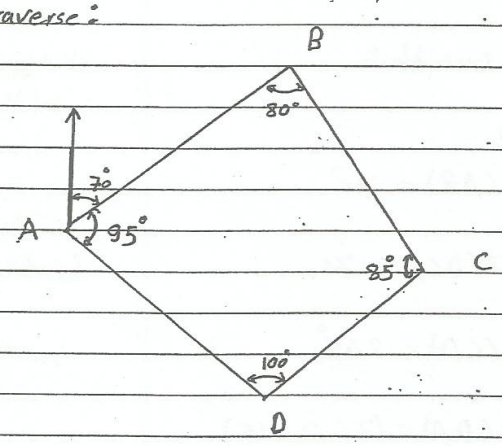
$$A = \frac{\left|(x_A \cdot y_B + x_B y_C + x_C y_D) - (x_B \cdot y_A + x_C y_B + x_D \cdot y_C)\right|}{2}$$

~ أحمد بني مفرج ~

الهندسة المدنية

الإمتحان الأول — نموذج أسئلة مقترحة

Question: compute the Azimuth and the Reduced for each line of the shown traverse:



Reduced bearing :-

① AB : N 70° E أقرب للشمال

هو التعبير عن الزوايا من حيث قربها للشمال أو الجنوب.

② BC : S 10° E أقرب للجنوب

طريقة إيجاد (Reduced bearing)

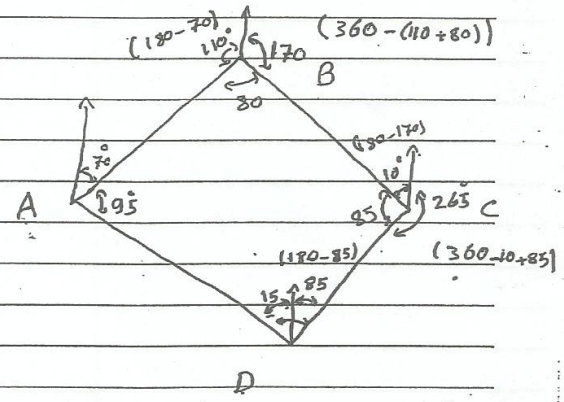
① تبدأ بالشمال أو الجنوب حسب الأقرب للخط.

② تجد مقدار بعد الخط عن اتجاه الشمال أو الجنوب (الزاوية)

③ CD : N 85° E أقرب للشمال

④ DA : N 15° W

③ تنتهي بالشرق أو الغرب حسب اتجاه الخط.



* للتأكد 15+70+95 يجب أن تساوي 180

وهذا حصل معنا في السؤال

يتبع

— أحمد بني جعفر 2 —

Azimuth :

مقدار الزاوية التي يصنعها الخط الواصل بين النقطة والمرجع بالنسبة لإتجاه الشمال مع عقارب الساعة.

طريقة إيجاده :

① نرسم خط الشمال عند بداية الخط بالترتيب، يعني إذا طلب عند AB نرسمه عند A إذا طلب العكس نبدأ من عند B.

② إيجاد مقدار الزاوية بين خط الشمال وبين الخط مع عقارب الساعة.

① $AZ(AB) = 70^\circ$

② $AZ(BC) = 170^\circ$

③ $AZ(CD) = 265^\circ$

④ $AZ(DA) = (360 - 15)$

$AZ(DA) = 345^\circ$

إعداد أخوكم عضو الجمعية الطلابية

أحمد بني مفرج

لوحات كاملة + التقارير .

marshal تجربة

مساحة 1 وزن العينة = 1200 gr

marshall : ① الجزء الأول: عملية التدخيل + الإشارة في نسبة الناعم

seive no	% passing	نسبة المحجوز الراكمي	نسبة المحجوز على كل منخل	وزن المحجوز	وزن التي تريده = 0 / 100
1"	100	0	0	0	0
3/4	90	10	10	120	109
1/2	78	22	12	144	140 coarse
3/8	70	30	8	96	86
4	55	45	15	180	184
8	42	58	13	156	160 fine
16	33	67	9	108	112
30	25	75	8	96	100
50	17	83	8	96	98
100	10	90	7	84	88
200	5	95	5	60	62

→ 1143 gr 6% = 68,58 gr

← لقد قمنا بتقليل أوزان الحجمة الخشنة وزيادة في المعامل بالحجمة الناعمة .

← الجزء الثاني :

الهدف الأساسي القيام بخلط الإسفلت (حسب نسبة معينة) مع العينة

الركام الذي قمنا بتحضيرها والقيام بخلطها بخلاطات محددة

② يجب أن نقوم بعملية تسخين الركام (Agg) إلى درجة حرارة 170° فوق إلى 210°

③ يجب أن لا تتجاوز درجة حرارة الخلط الحد المسموح به 160°

④

⑤ نسبة الإسفلت ← 6% = 72 غرام

يوجد خطأ في عملية التوزين

⑥ حفظ = 1143 gr

وزن الإسفلت = 68,58 gr

ALADIB.net الحضارة

Tuesday		SURVEYING
DATE :05-07-2011		1st Exam
STUDENT NAME: هيثم فلاح يونس		TIME : 45 MINUTES

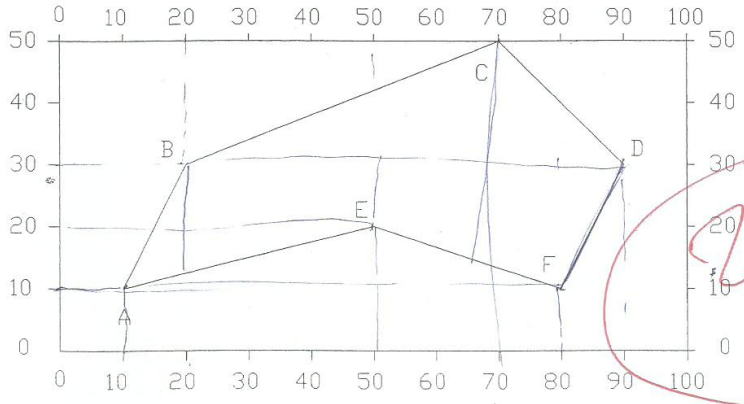
13

م. علي المحاميد
1.25 - 2.25

B

Q_1 (7 points): Compute the area of the traverse ABCDEF.

4600 m



2

$(+B+E)=5$

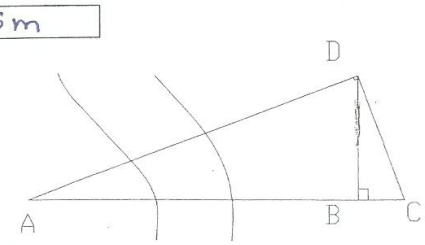
Q_1 (7 points): Complete the following table.

Station	B.S	I.S	F.S	H.I	R.L
0	2.56				-95.7
10		2.54		0.2	-95.5
20		2.64		-0.1	-95.6
30		3.12		-0.48	-96.08
40	1.35		3.84	-0.72	-96.8
50		1.89		-0.54	-97.34
60	1.64		3.85	-1.96	-99.3
70		1.93		-0.29	-99.59
80		2.65		-0.72	-100.31
90	1.45		3.56	-0.91	-101.22
100			3.56	-2.11	-103.33

5

Q_3 (6 points):- Compute the distance AC, if the distance DC=24.75 m and DB= 21.45 m

Ac=	49.6115 m



6

GOOD LUCK