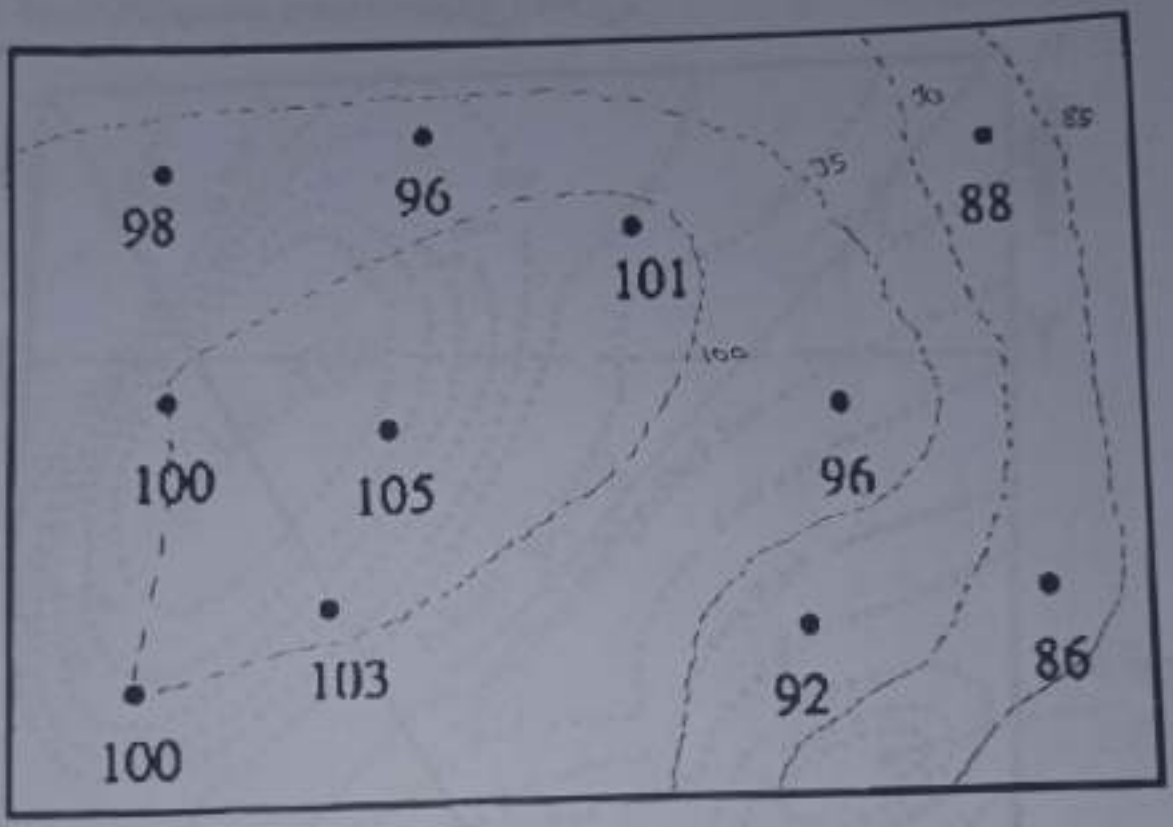
Map 1.1

Draw contour map for the elevation points shown on the map below.
Contours in meters.



C.I=5

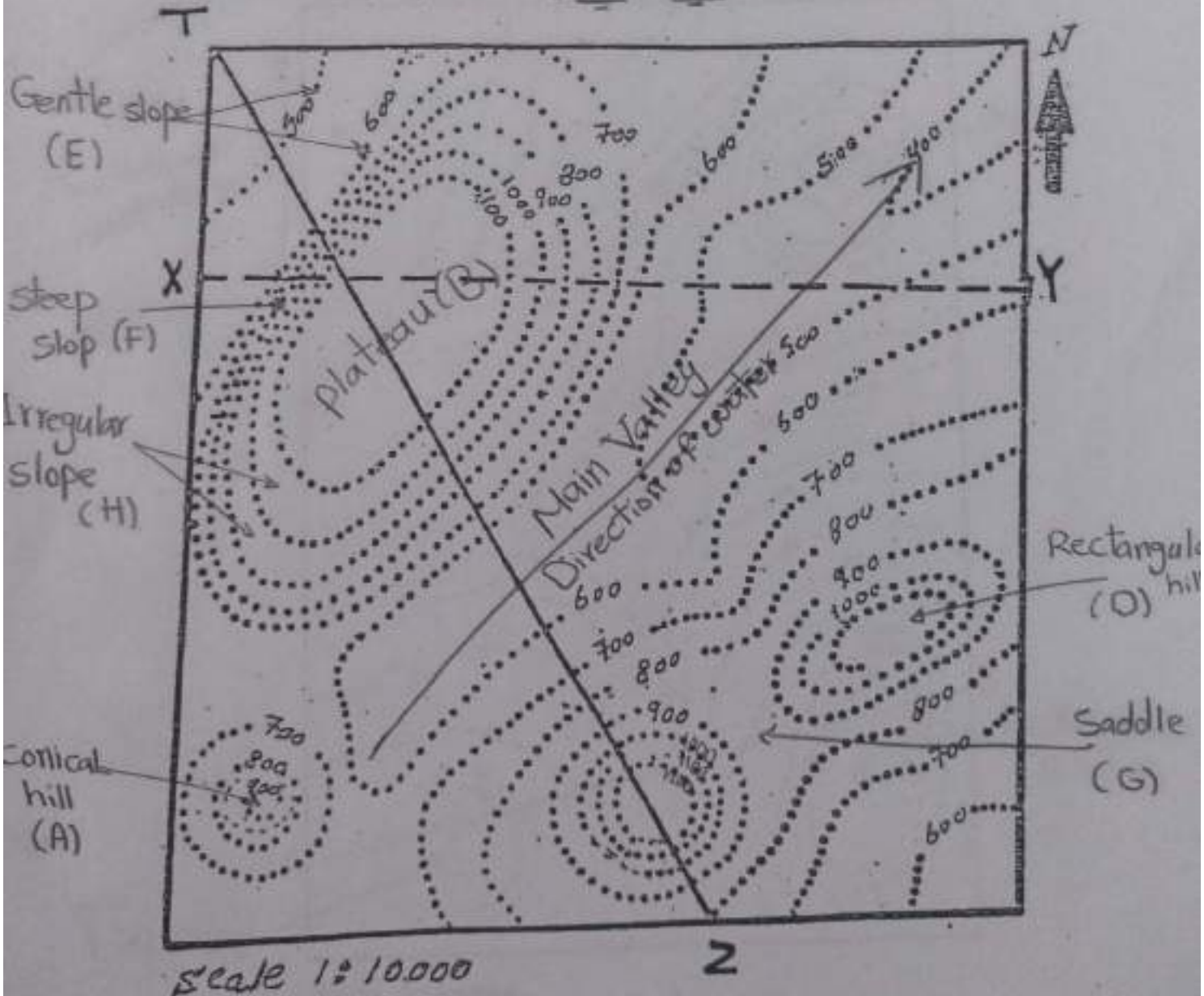
85, 90, 95, 100

Map 1.2

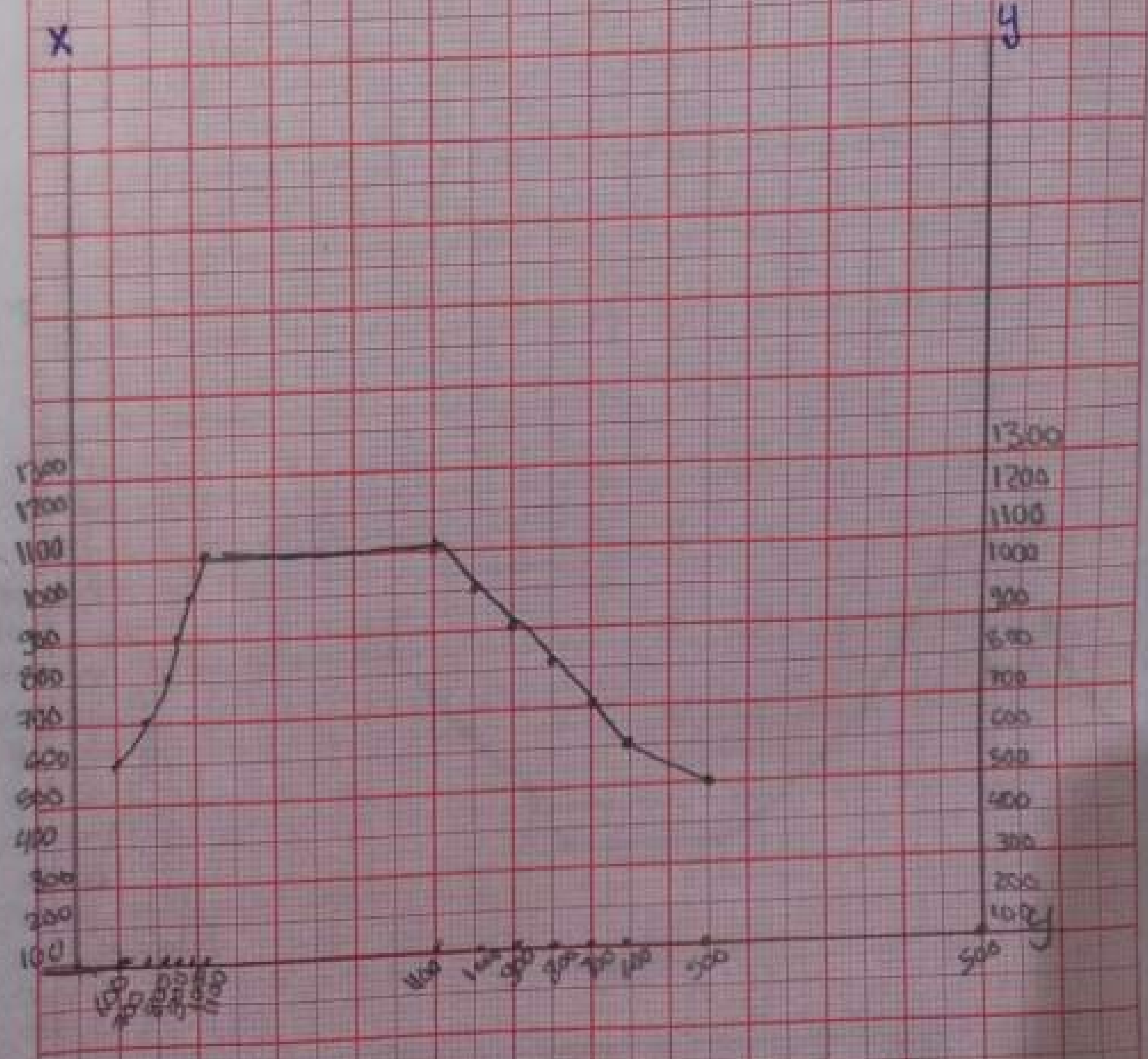
1- Write down the letter of the topographic feature of the following list on the map.

A- Conical hill ✓ B- Plateau ✓ C- Main Valley D- Rectangular hill ✓ E- Gentle slope ✓ F- Steep slope ✓ G- Saddle ✓ H- Irregular slope ✓

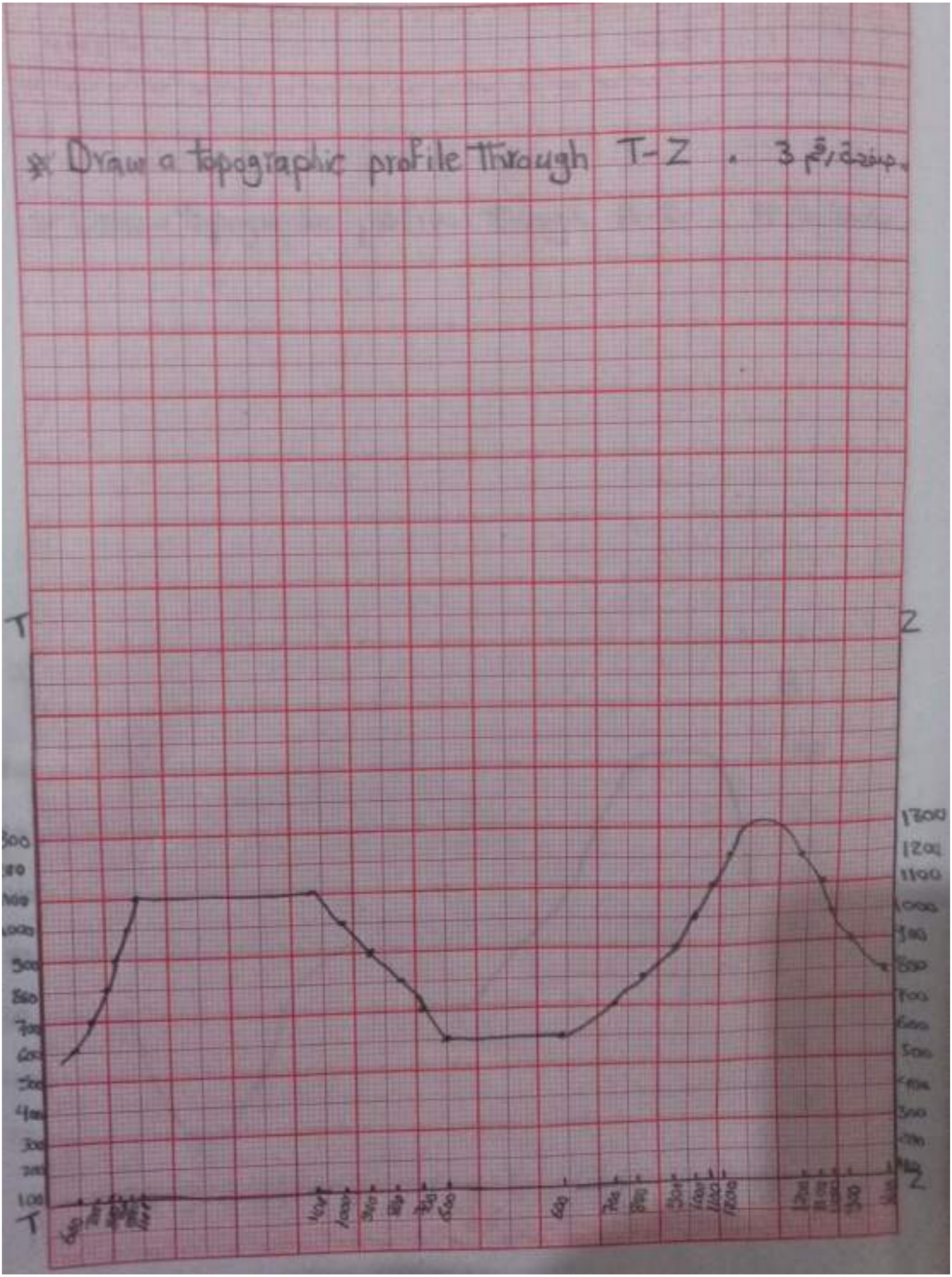
2- Draw a topographic profile through X- Y ✓ and T- Z. ✓



* Draw a topographic profile through X - Y " 3 ، صفحة "



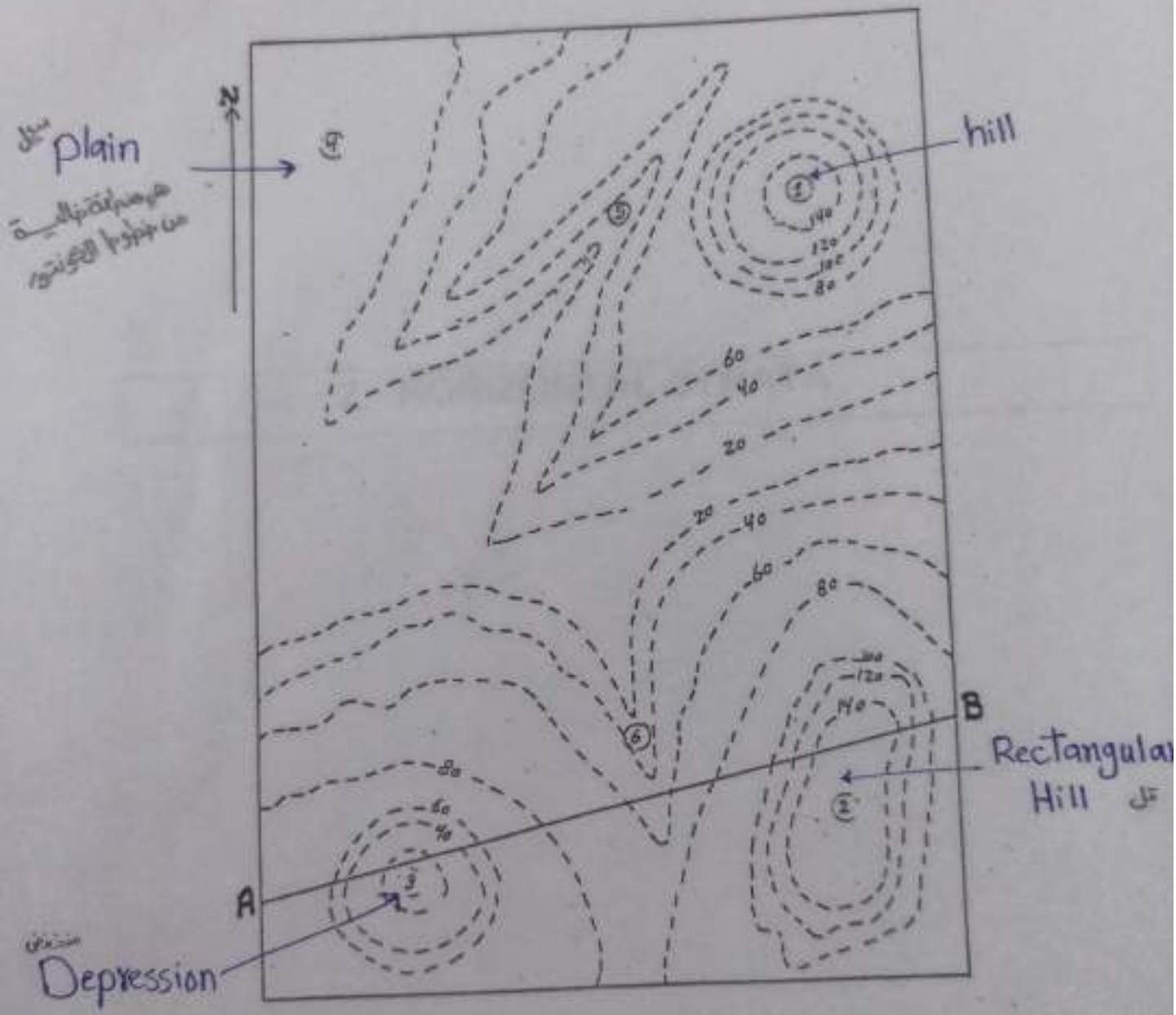
* Draw a topographic profile through T-Z . 3 marks.



Map 1.3

Using the following topographic map, you are required to:

1- Define the topographic feature for the corresponding number on the map 2- Draw a topographic profile through A- B



Scale 1 : 10000

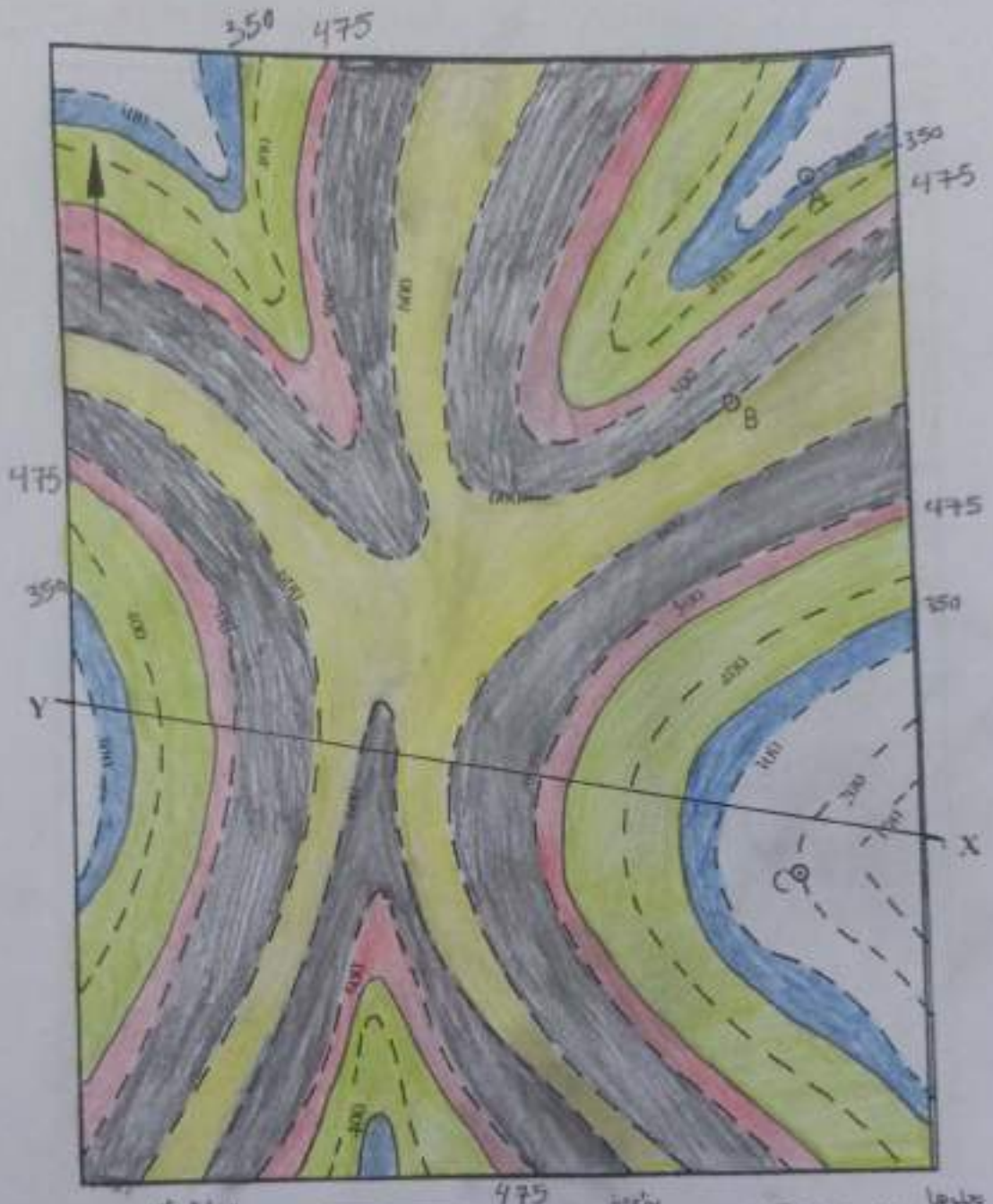
(1)- hill (2) Rectangular hill

(3) Depression

(4)- plain

(5), (6) - Valley

* Draw a topographic profile through A-B " 4 مرفوعة رقم "



السطح السفلي — بنزع من — يعلوها

MAP 2.1: The lower surface of a conglomerate (50 m thick) appears at point A, this bed is overlain by a shale bed (125 m thick), that is in turn overlain by a 25 m thick sandstone bed then finally 100 m thick mudstone bed that is capped by a limestone bed of unknown thickness. These beds are horizontal. Draw the beds outcrop. Calculate the vertical thickness that can be drilled to reach the lower surface of the sandstone bed at points **B** and **C**. Draw a cross section along X-Y. [3]

[1] نفس أفقية

??	Limestone	600
100	mudstone	500
25	Sandstone	475
125	Shale	350
50	conglomerate	350

من الرسمة

[2] * The vertical Thickness of The sandstone at The point (B)

القيمة الأكبر - القيمة الأصغر

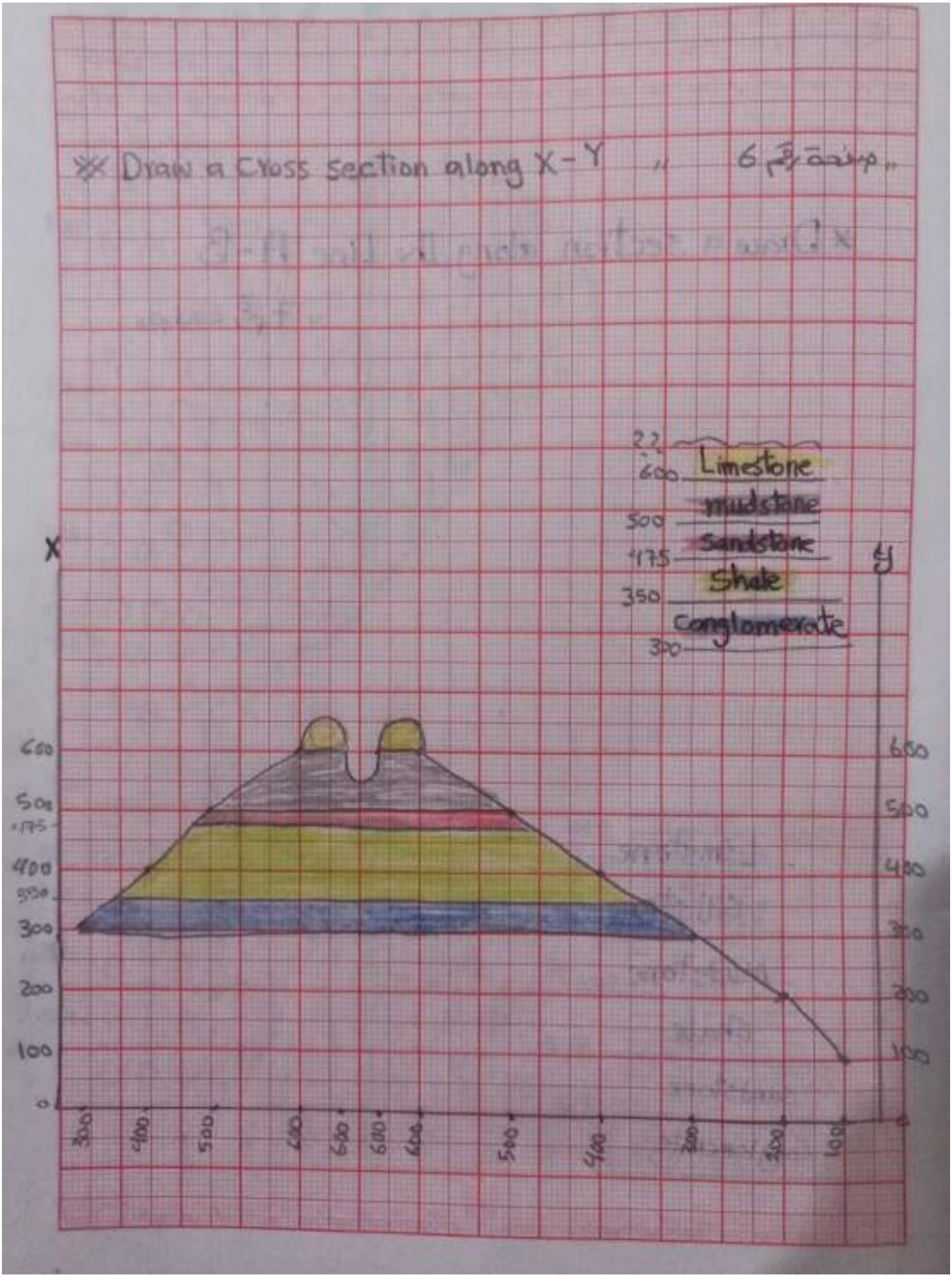
قيمة النقطة B - السطح السفلي للـ sandstone

$= 600 - 475 = 125\ m$

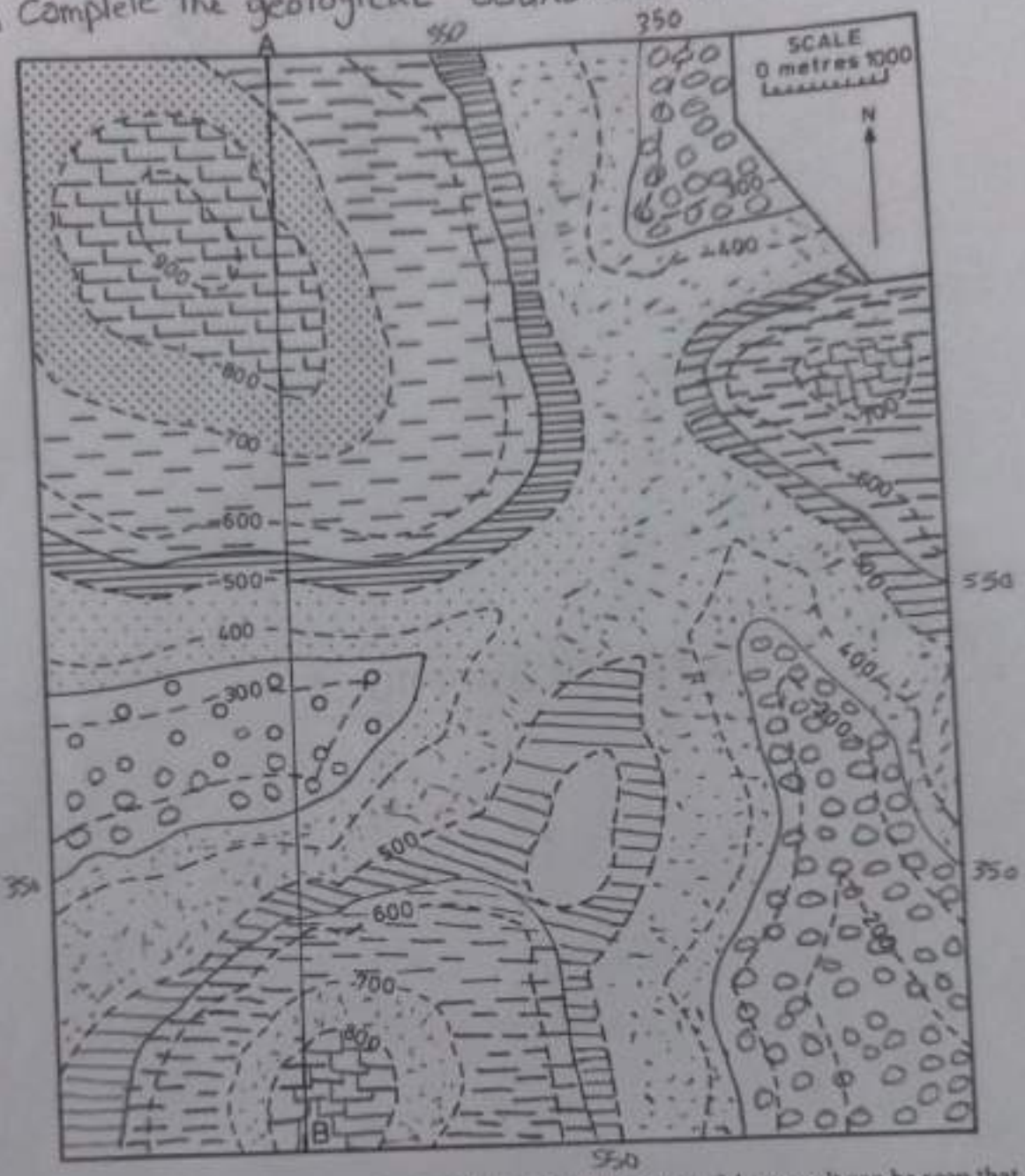
* ///// point (C)

$= 475 - 200 = 275\ m$

※ Draw a Cross section along X-Y



[1] Complete the geological boundarises.



MAP 2.2: The geological outcrops are shown in the north-west corner of the map. It can be seen that the beds are horizontal as the geological boundaries coincide with, or are parallel to, the ground contour lines. Complete the geological outcrops over the whole map. How thick is each bed? Draw a vertical column showing each bed to scale (1 cm = 100 m.) Draw a section along the line A-B. [4]
(Contours in meters.)

دراسة الرسم البياني

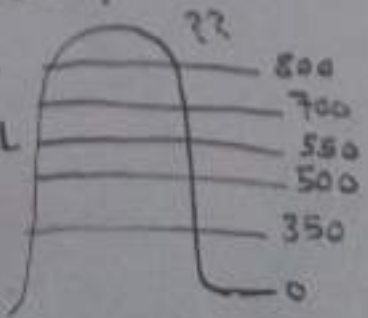
[2] How Thick is each bed?

Limestone
Siltstone
Mudstone
Shale
sandstone
cong

800
700
550
500
350
0

[3] Draw a vertical column

[3] ?

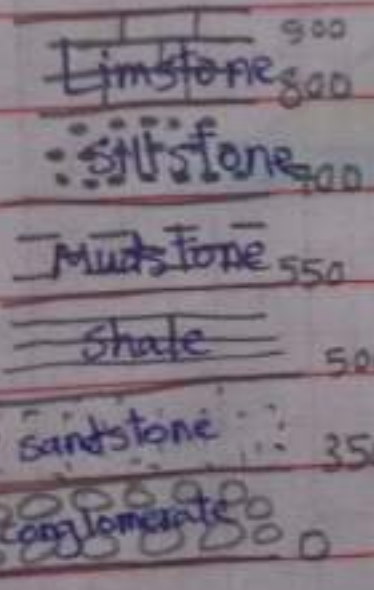


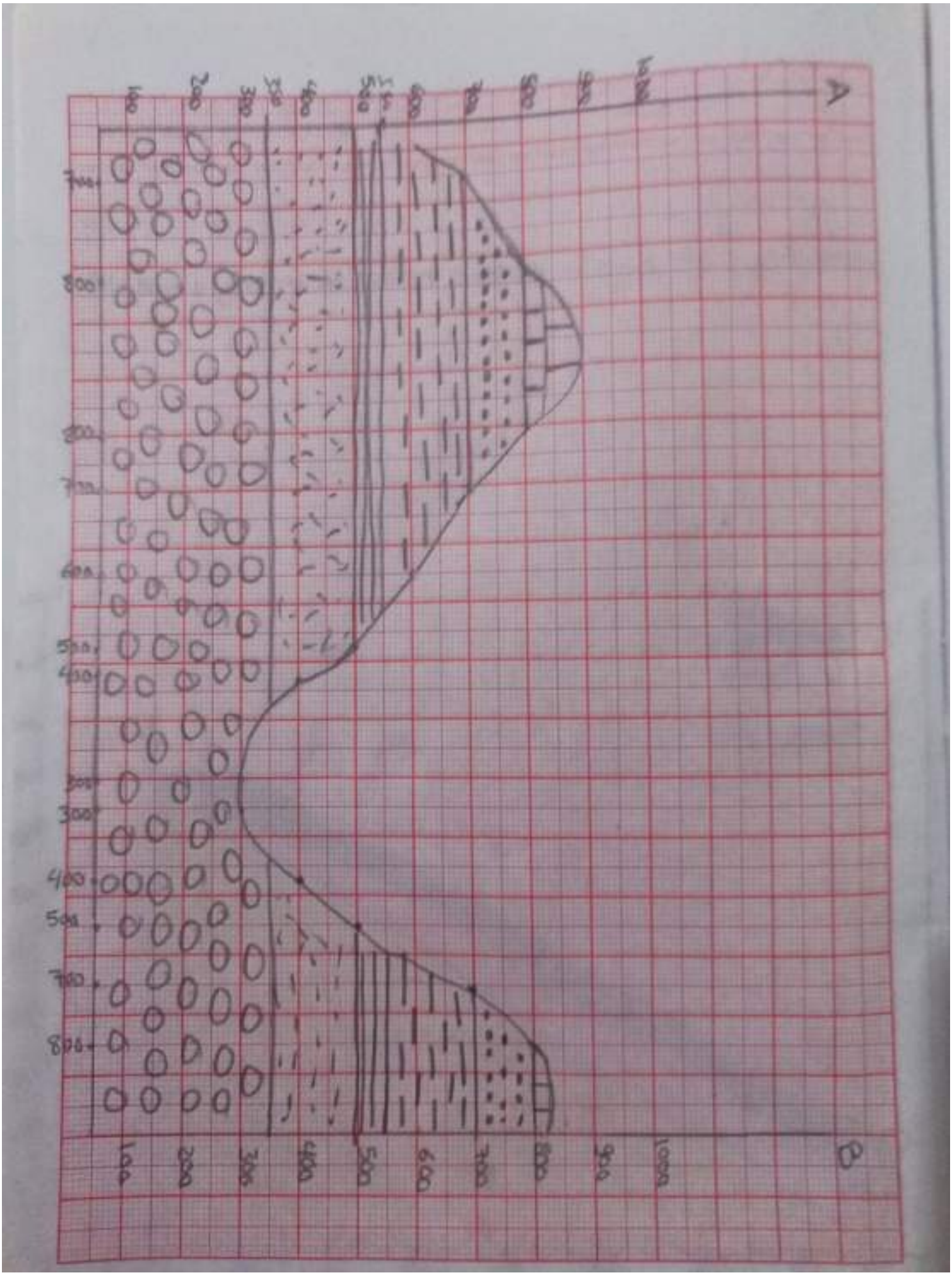
التاريخ : / /

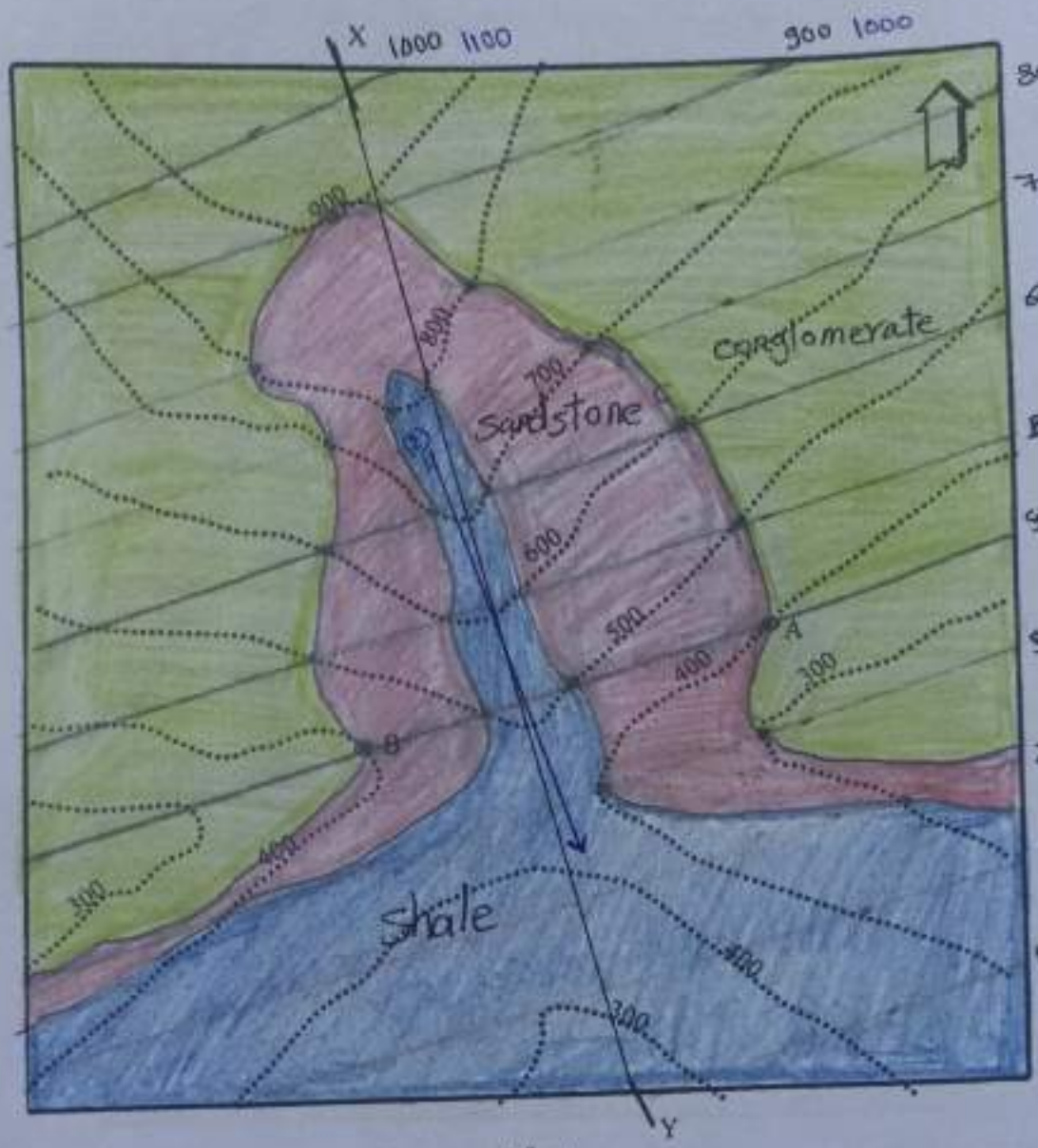
موضوع الدرس :

* Draw a section along the Line A-B

صفحة رقم 7





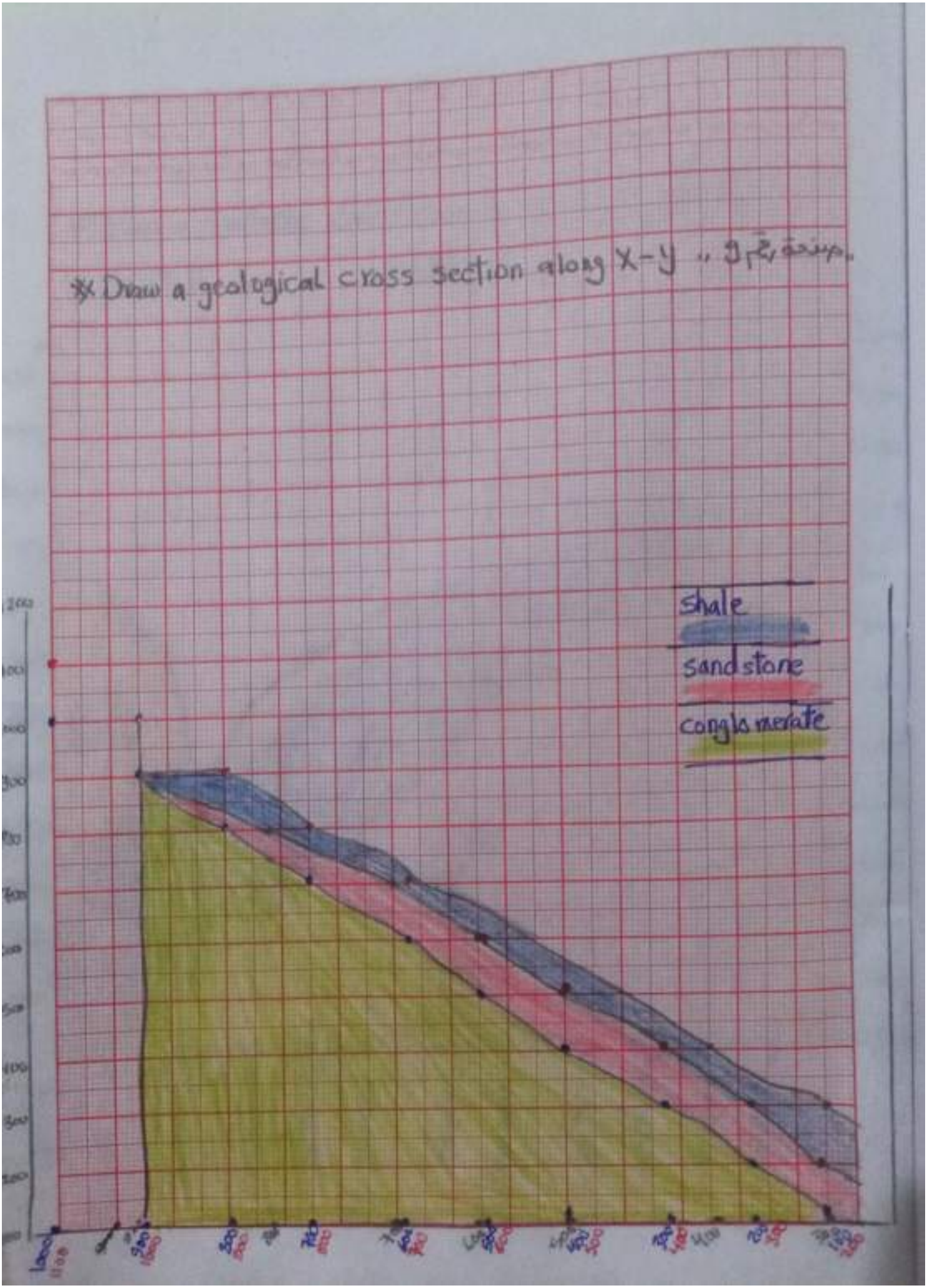


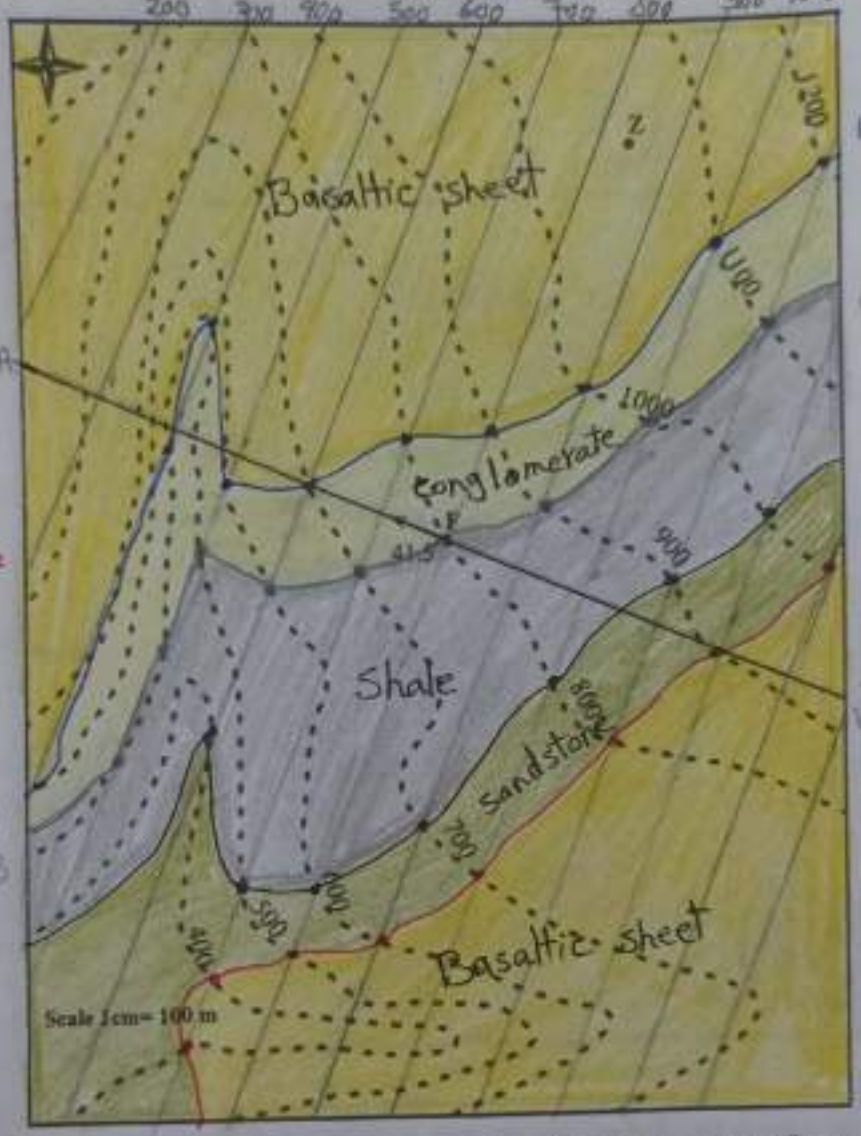
MAP 3.1: The lower surface of a 100 m thick sandstone bed appears on point A, B and, C. It is underlain by conglomerate and overlain by shale. Determine the angle and direction of the true dip. Draw the outcrops of these beds. Draw a geological cross section along X-Y. (Scale 1 cm = 200 m).

Shale

Sandstone

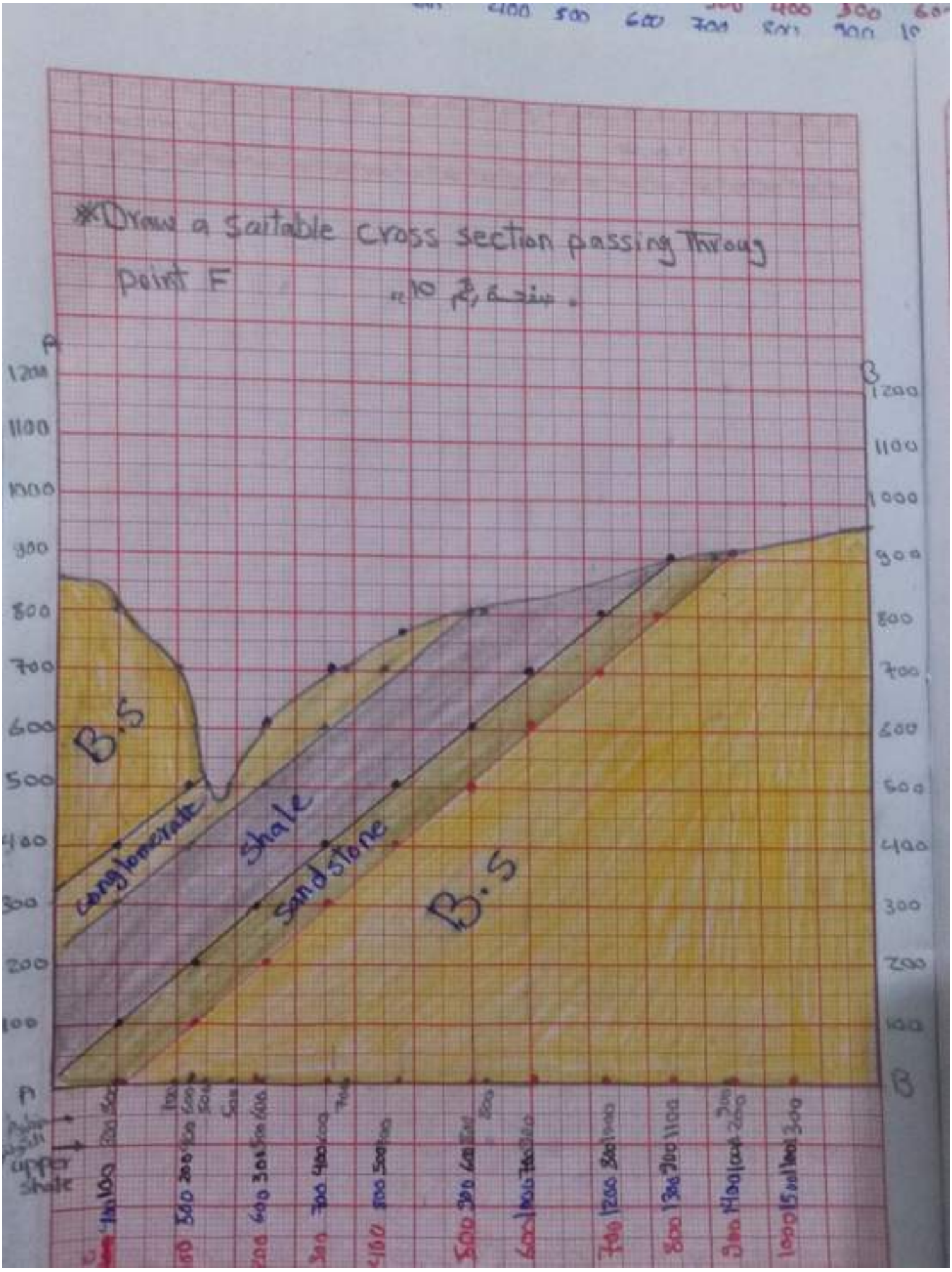
conglomerate


* Draw a geological cross section along X-Y
shale
sandstone
conglomerate



MAP 3.2: The upper surface of a dipping shale bed (200 m thick) appears at point F, the true dip direction and the dip of this bed are shown on the map. It overlies a 100 m thick sandstone bed and underlies a 100 m thick conglomerate bed. The whole succession is covered by basaltic sheet. Draw outcrops of the beds. Determine the true thickness of all beds. Calculate the depth after which the lower surface of the sandstone bed is reached at point Z. Draw a suitable cross section passing through point F.

* upper surface of shale → point F
* $\tan\theta = \frac{C.I}{S.d} \times Scale$ $\quad \therefore S.D = 1.13\,cm$
* true Thickness = apparent × cos 41,5 = ___
* true Thickness of shale = 200 × cos (41,5) = 149,79 m
true thickness of sand stone, cong = 100 × cos(41,5) = 74,8 m


*Draw a suitable cross section passing Throug
Point F
A
B
1200
1100
1000
900
800
700
600
500
400
300
200
100
B.S
conglomerate
shale
sandstone
B.S
B.S

Absolute age ١-العمر المطلق

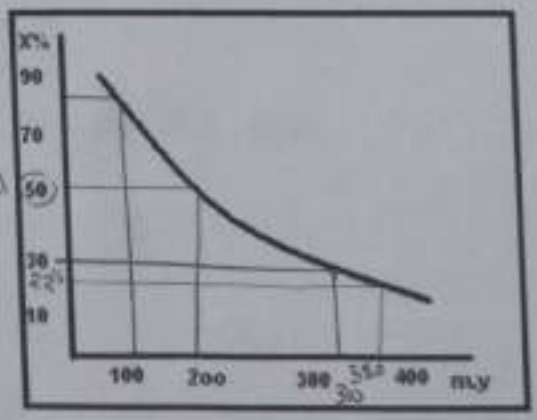
حدد عمر الصخور التي بها مواد مشعة

* بين الطبقة 13 والـ 17 زاوي [3] angular unconFormity

[1] nonconFormit هتباين * بين الطبقة رقم ١ وطبقة الـ schist

* بين الطبقة 4 و 7 زاوي [2] anglar unconFormity

* تتعمل بالمسطرة ويكون الرقم التقريبي .



النصف لـ X

ترتيب الأحداث :-

younger
17-18
B
7-13
A
1-4
schist
older

Decay curve for X isotope

Using the previous figures and determine the following:

a- The date of metamorphisim of schist...380....m.y

b- The date of intrusion A.....310.....m.y c- The

date of intrusion B.....110.....m.y d- The half

life of isotop x.....200.....m.y e- What is the age

of beds 1-4.....younger than 380 and older than 310.....Periods f- What is the age of

beds 7-13.....younger than 310 and older than 110.....Periods g- The oldest period

of bed 17. younger than 310

h- Colored the unconformities surfaces. i-

Type of structure present. X

imp * j- Geologic history.

younger

17-18

B

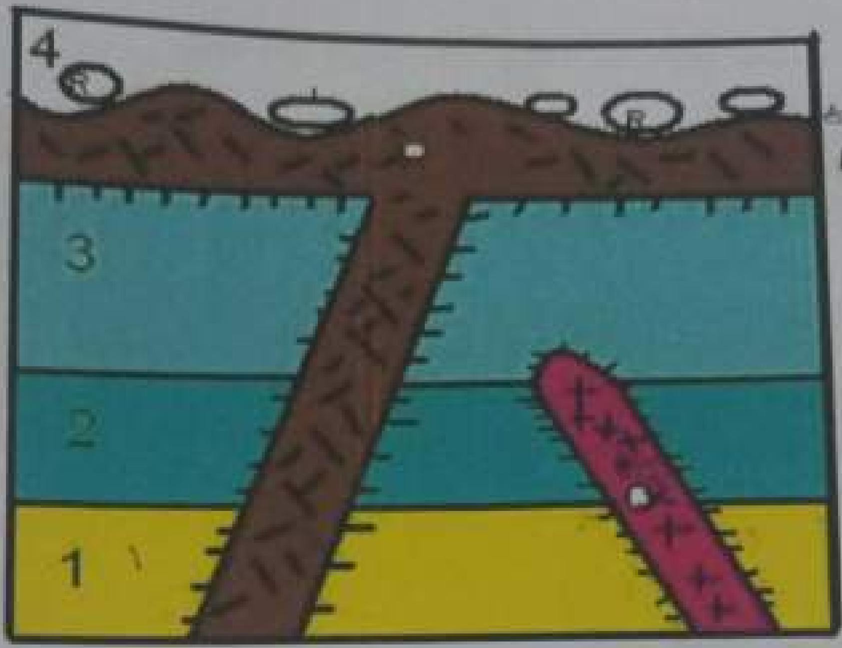
7-13

A

1-4

schist

older



Radiation percent of Q (X 40%)

باستخدام ال Curve صفحة 16 R (X 70 %)

Using the following figures and determine the following:

a- The date of intrusion Q.......250.........m.y b- The date of intrusion R.........150..........m.y c- What is the age of beds 1-3 older than 150 Periods d- What is the age of beds 4 younger Than 150 Periods e- Geologic history. f- Type of structure present

ترتيب الأحداث :-

younger

4

R

Q

1-3

Older