实习七：间接法求岩层产状和编制倾斜岩层地质图



实习要求

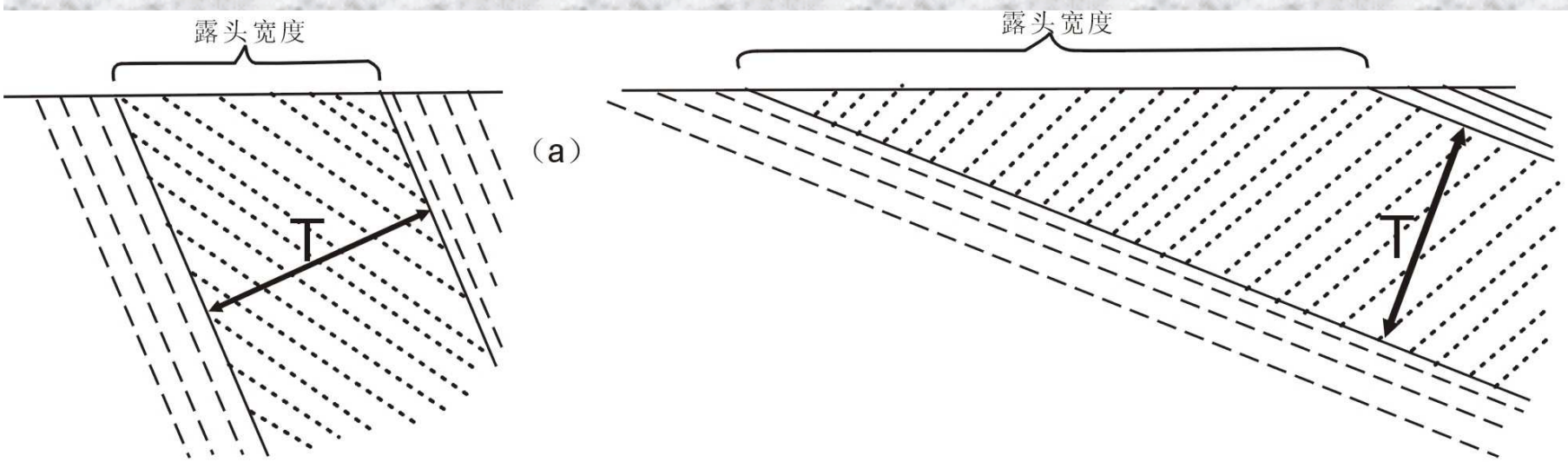
1、分析倾斜岩层在地质图上表现特征

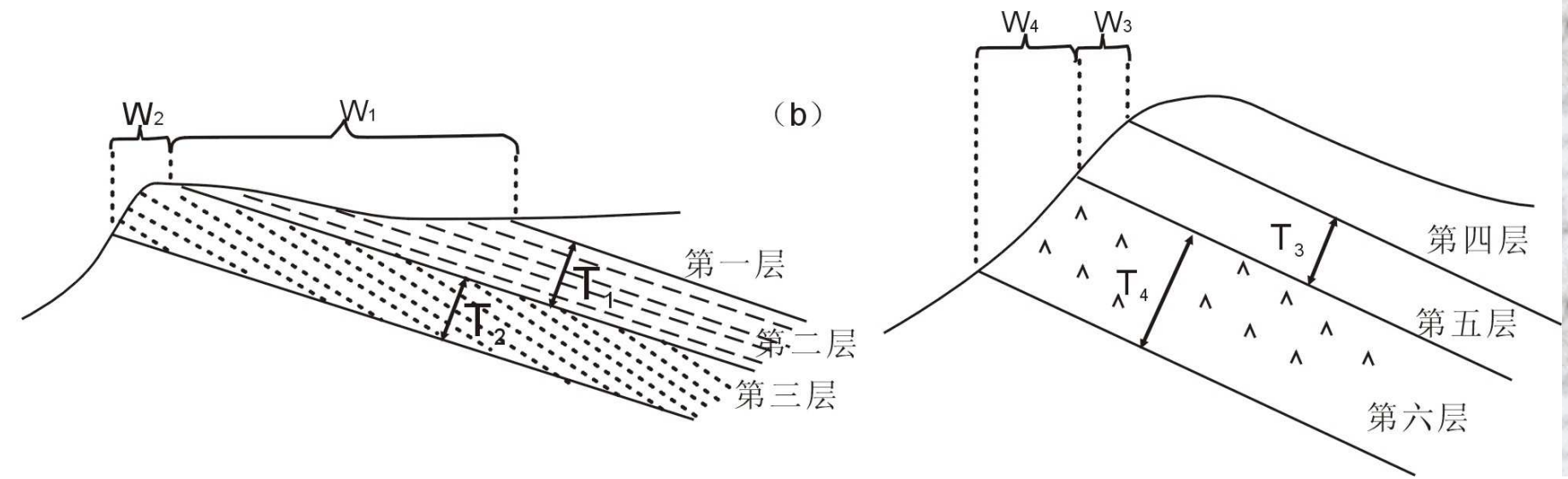
2、学会间接法和三点法及求岩层产状

3、掌握不整合在地质图上表现特征

4、编制倾斜岩层地质图

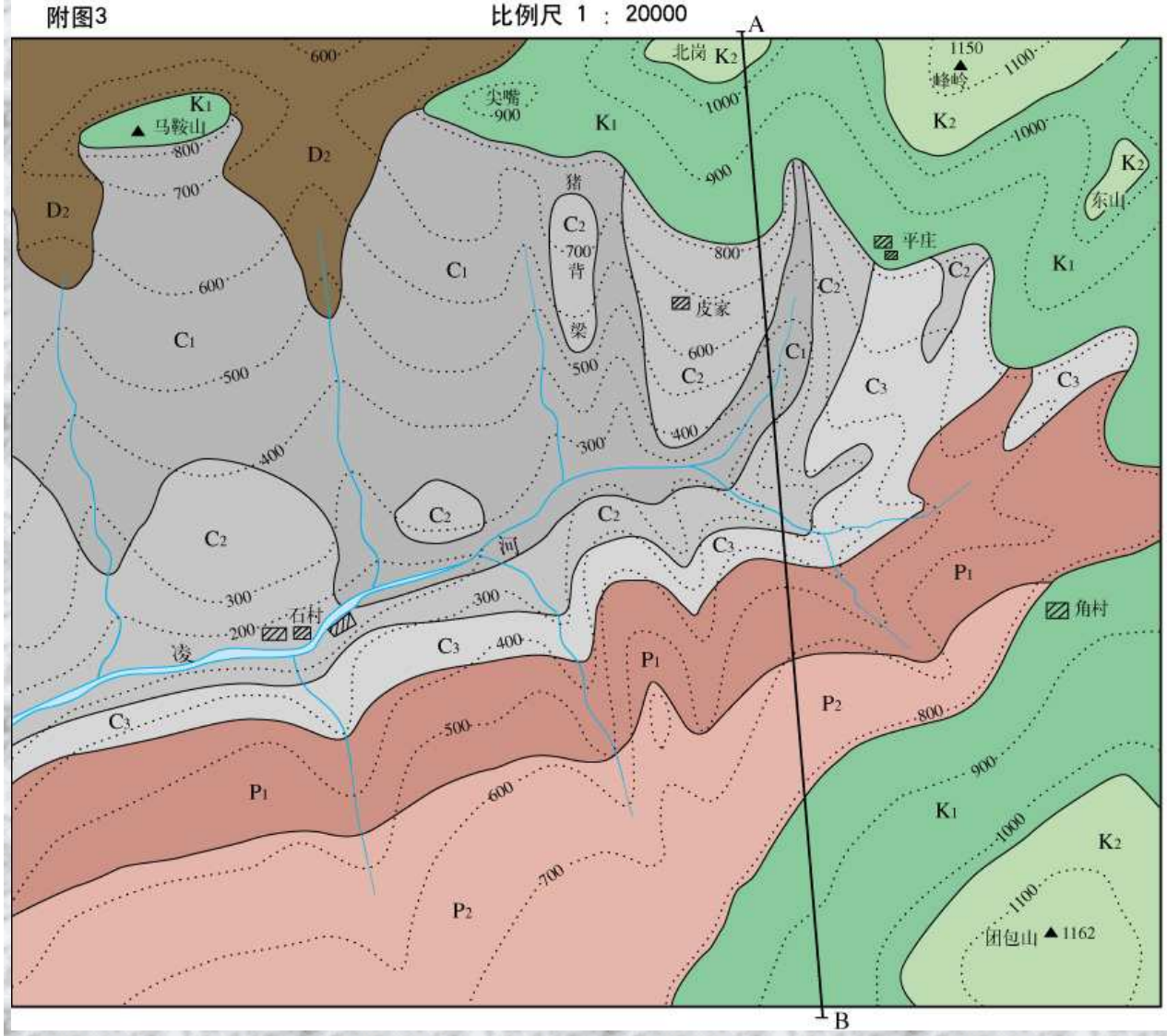
1、分析倾斜岩层在地质图上表现特征





凌 河 地 质 图

附图3　　比例尺 1 ： 20000



实习二　读倾斜岩层地质图并作剖面图

一、目的要求

1　读倾斜岩层和不整合接触关系的地质图，用“V”字形法则分析倾斜岩层的产状

2　编绘倾斜岩层地质剖面图

二、“V”字形法则在地质图上速写

三、不整合：角度不整合、平行不整合

四、编制倾斜岩层剖面图

1　选择剖面位置

2　绘地形剖面

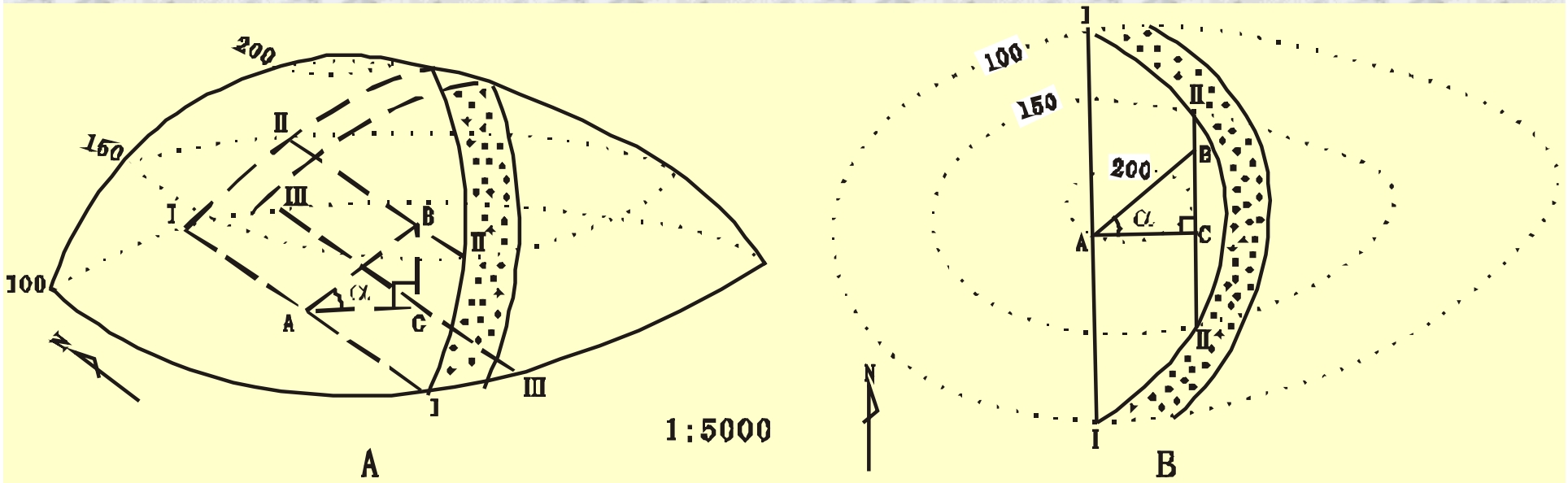
3　完成地质剖面

4　标明花纹、代号、整饰

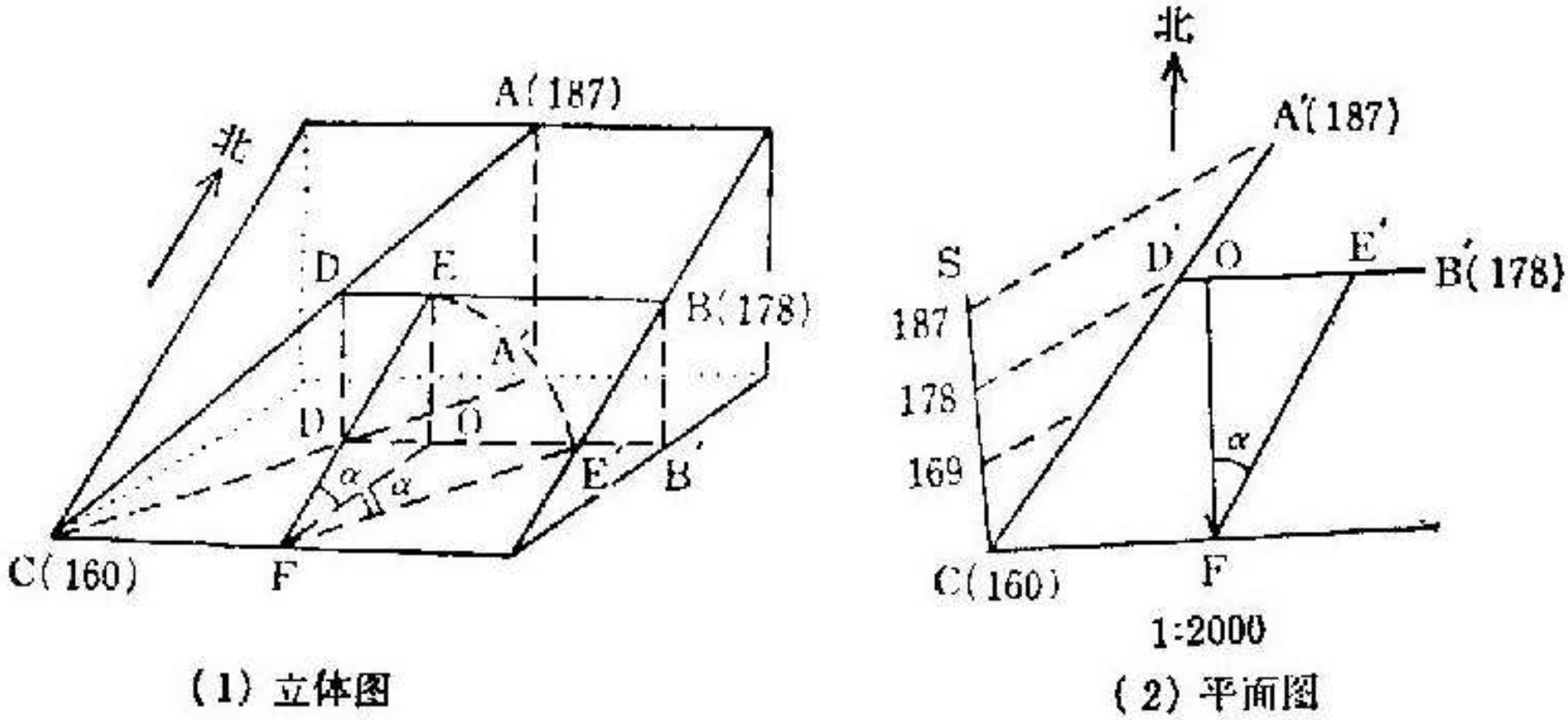
图　例

- K_2 上白垩统砂岩
- K_1 下白垩统砾岩
- P_2 上二叠统页岩
- P_1 下二叠统泥灰岩
- C_3 上石炭统石灰岩
- C_2 中石炭统页岩
- C_1 下石炭统页岩、煤层
- D_2 中泥盆统白云岩
- 地质界线

2、间接法及三点法求岩层产状

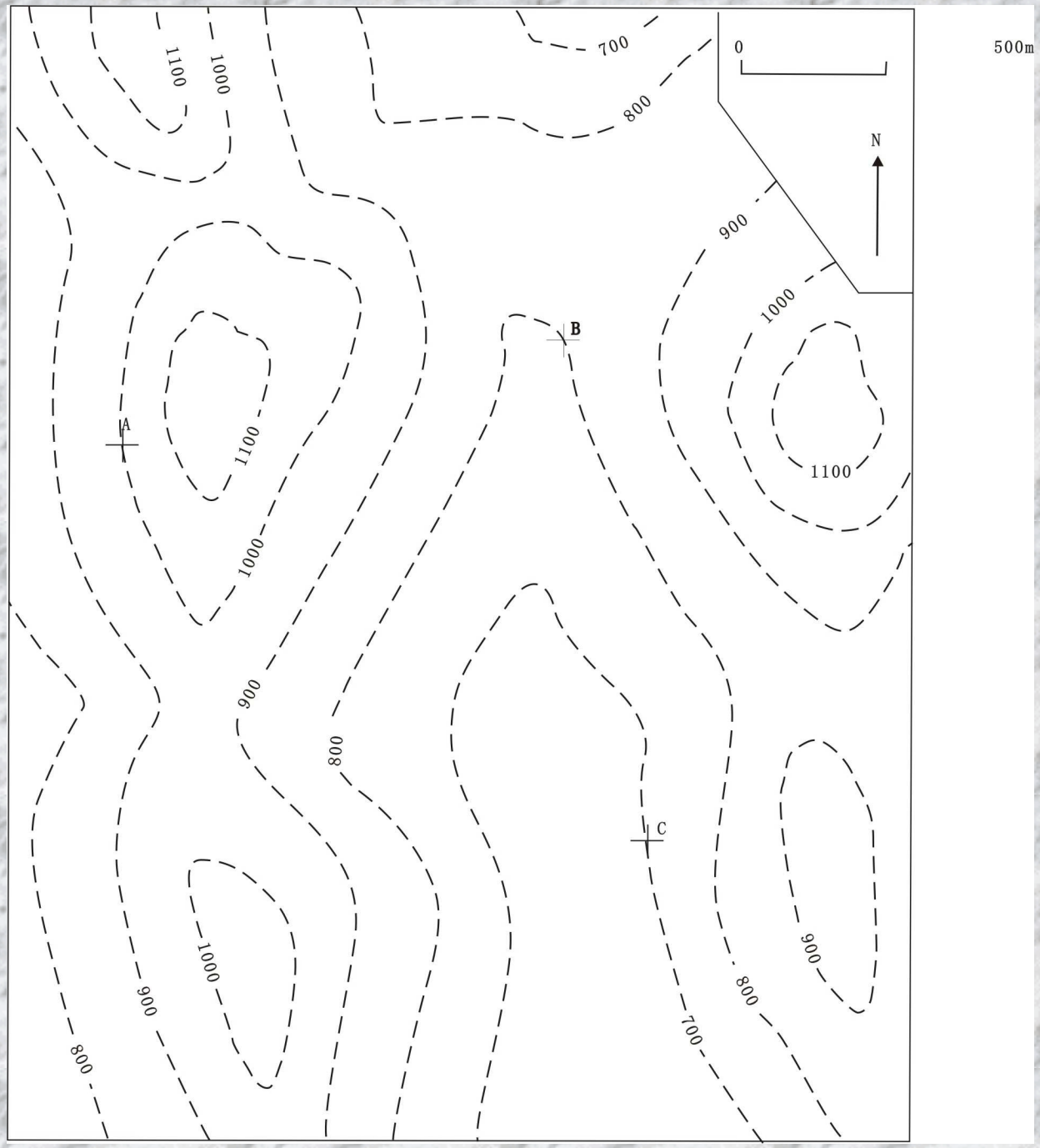


三点法求岩层产状

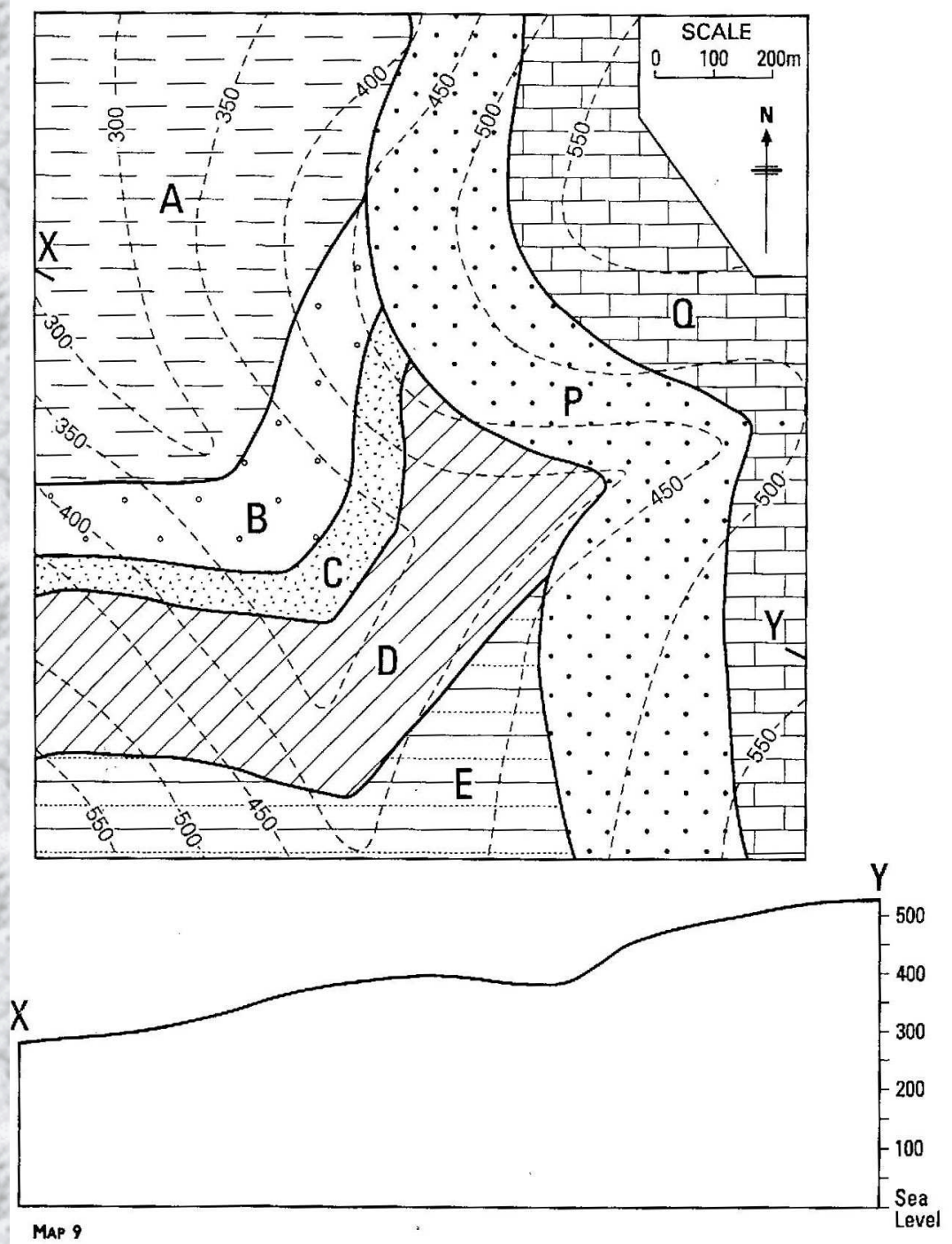


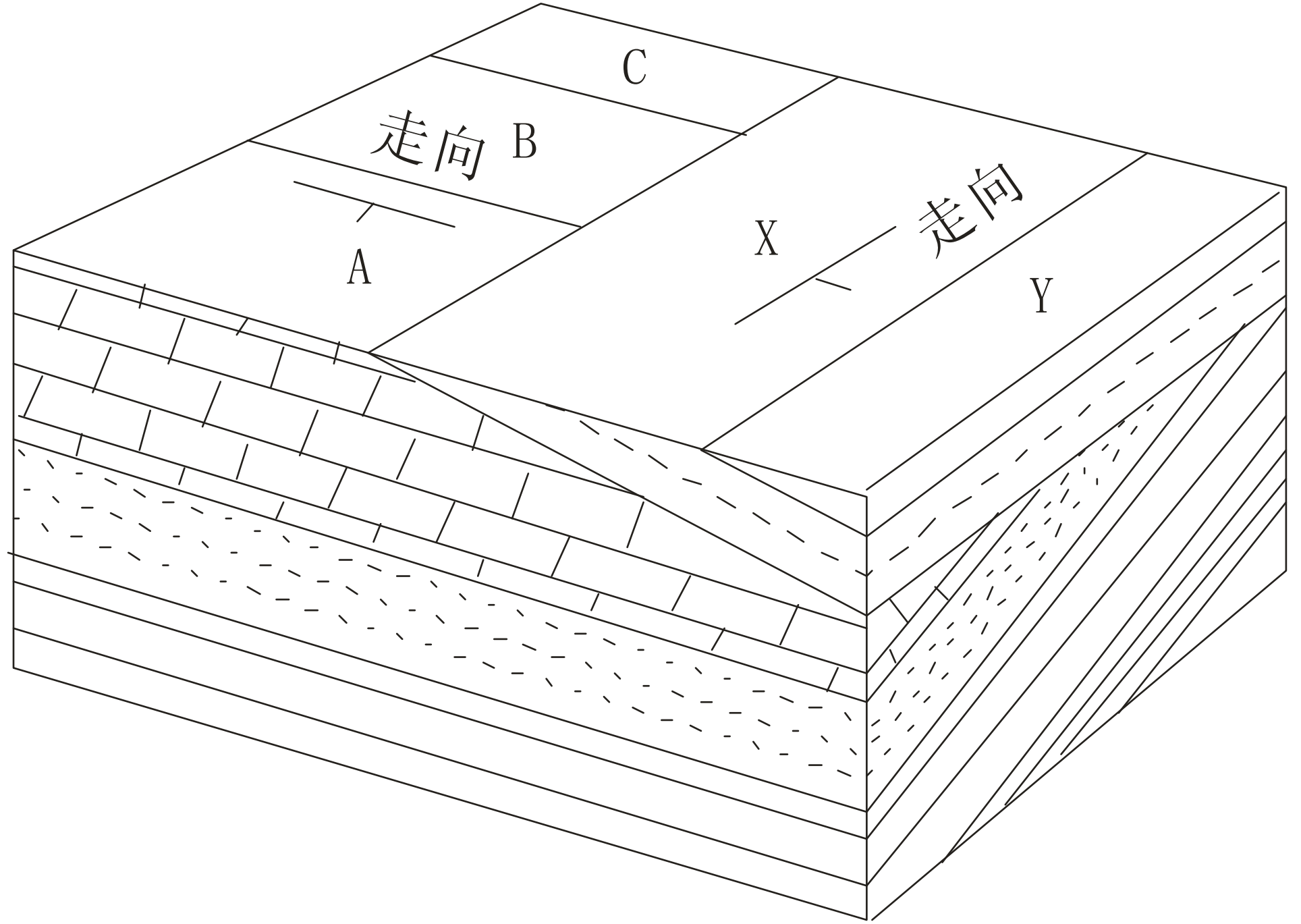
(1) 立体图　　(2) 平面图

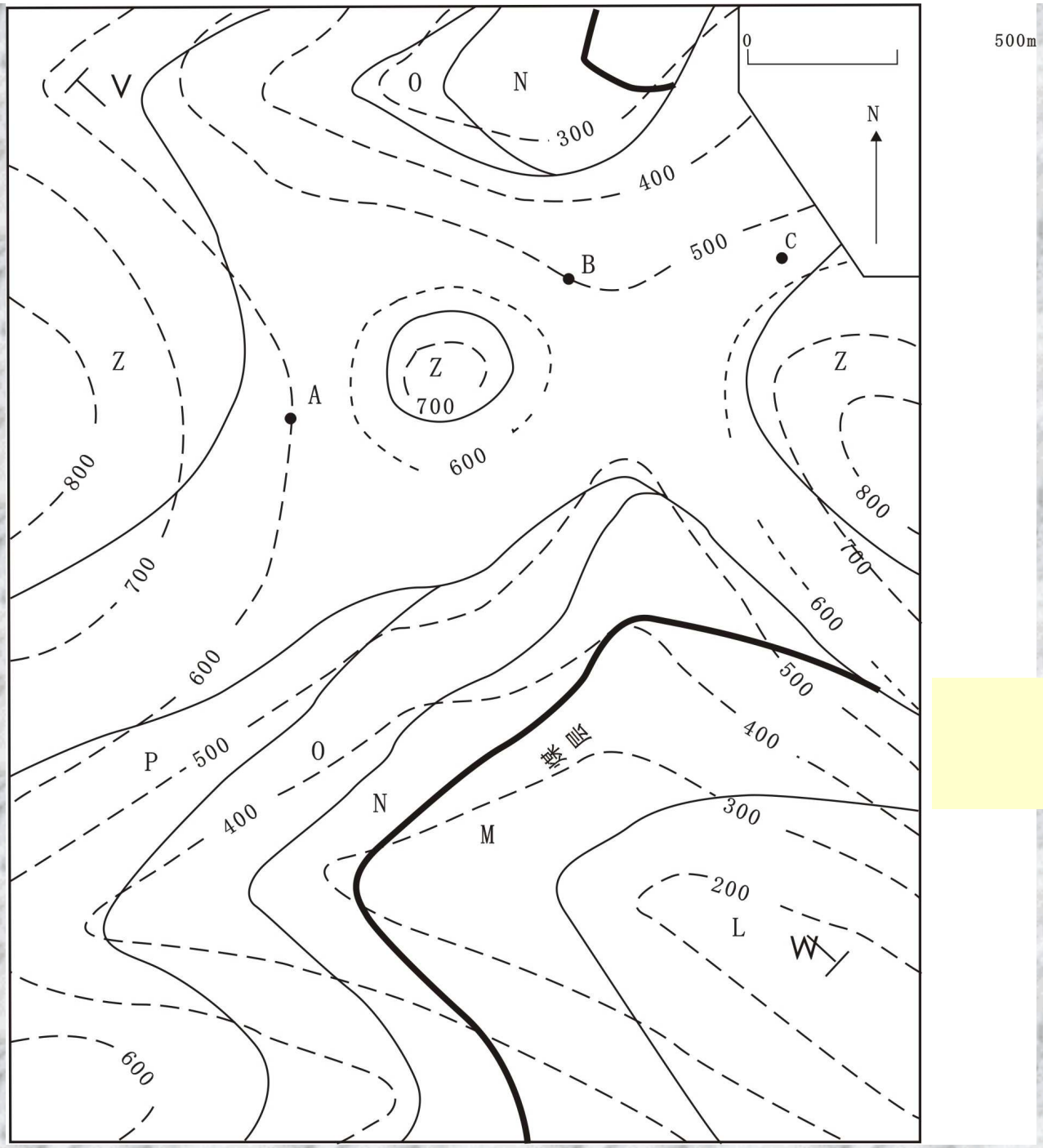
P22


0
500m
N
A
B
C
1100
1000
900
800
700

3、掌握分析不整合地质图的方法

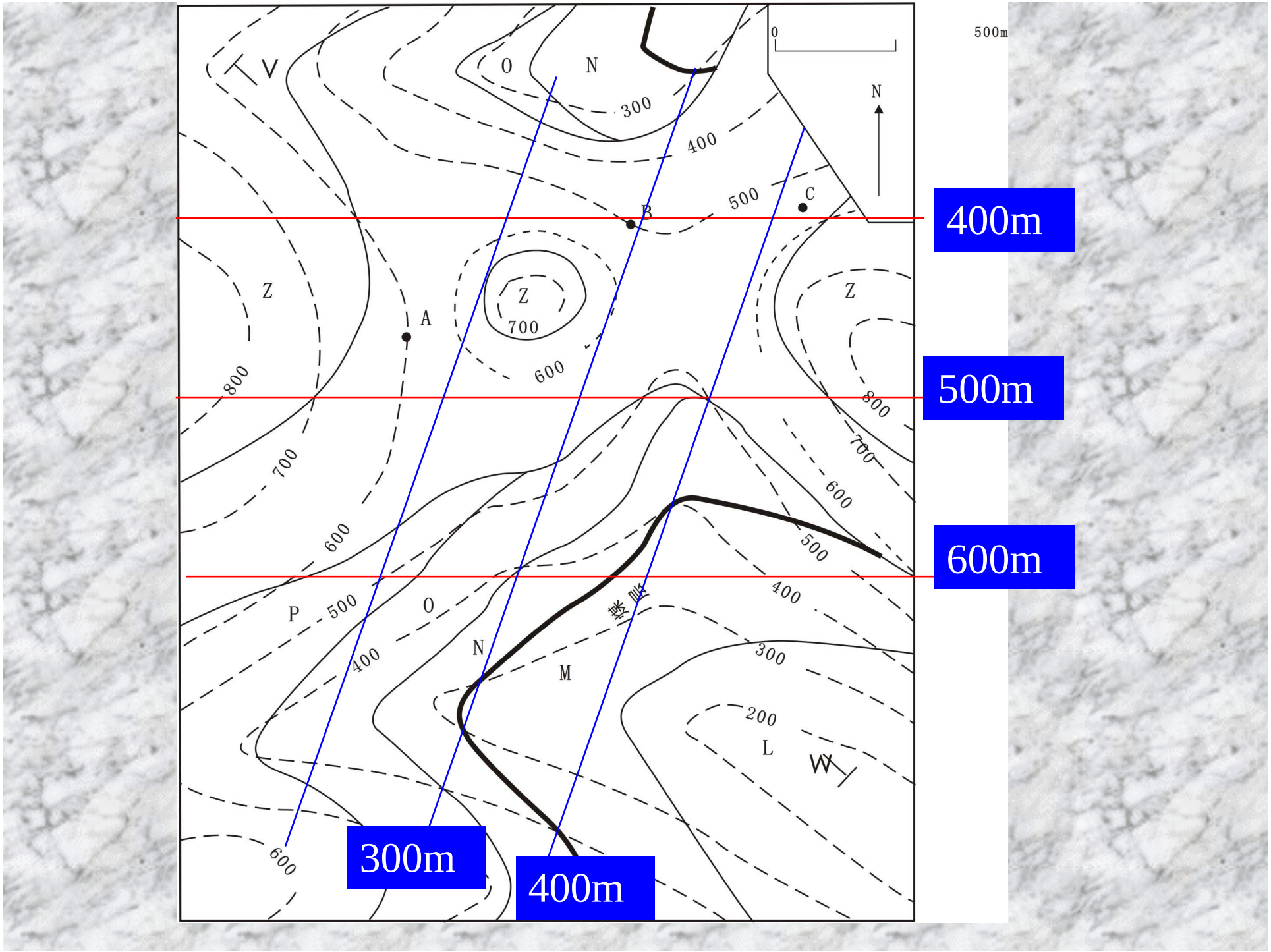



C
走向 B
A
X
走向
Y

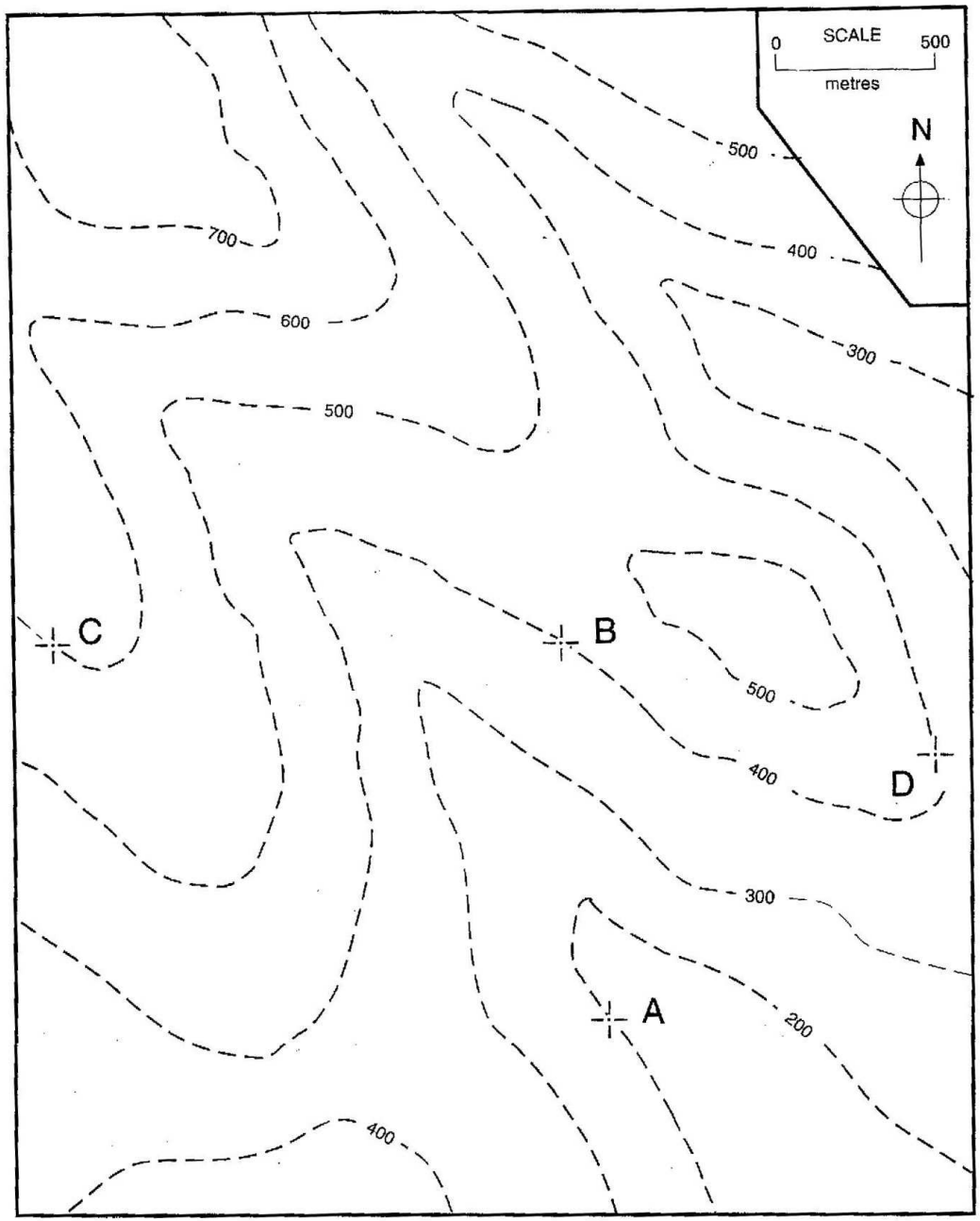


0
500m
N
V
O
N
300
400
500
B
C
Z
Z
Z
A
700
600
800
700
600
800
700
600
500
400
P
500
O
400
N
M
300
200
L
W
600

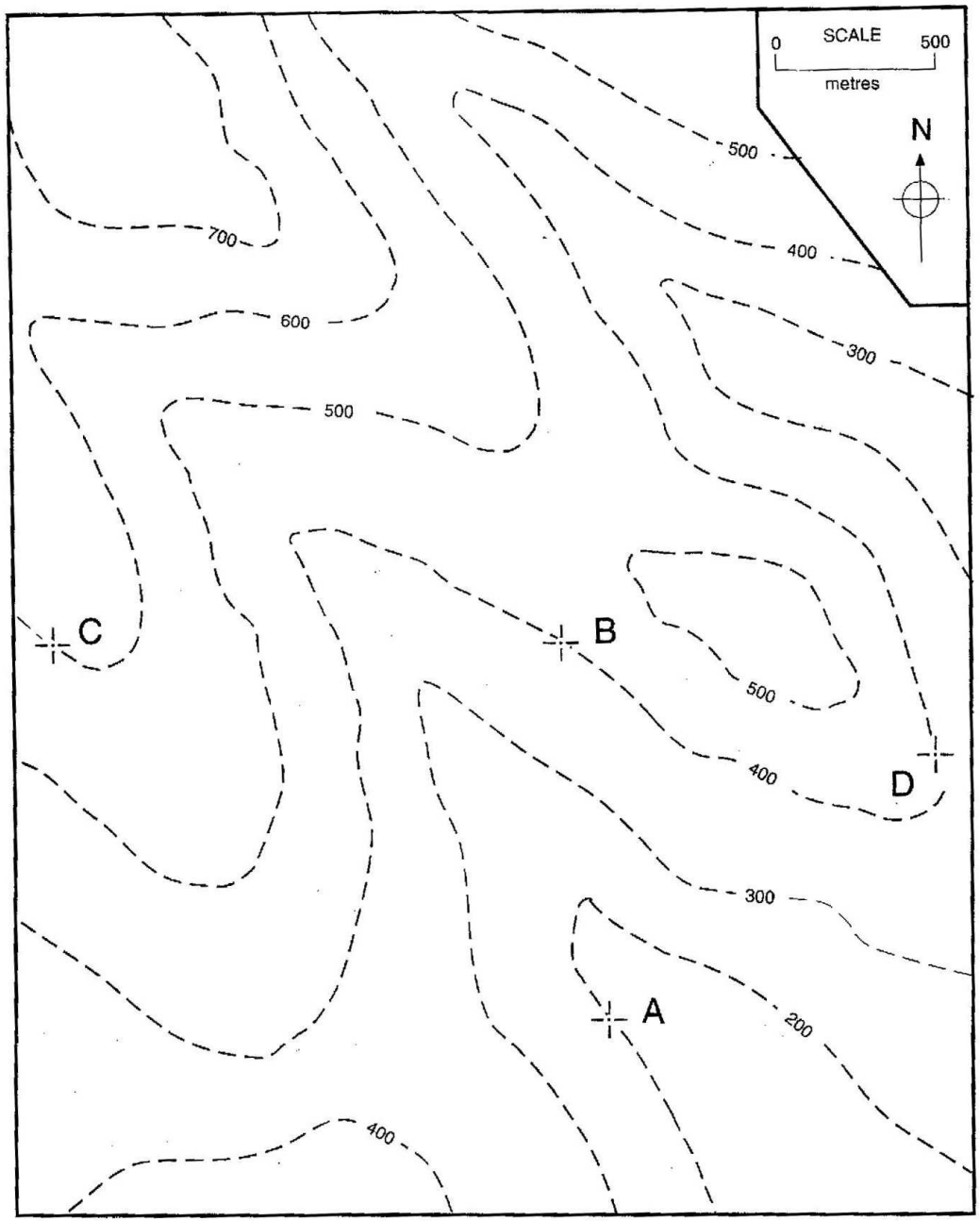
P27


0
500m
N
V
O
N
300
400
500
C
B
400m
Z
A
Z
700
600
Z
800
700
600
800
700
600
500
500m
600m
P
500
O
400
N
M
断层
400
300
200
L
W
600
300m
400m

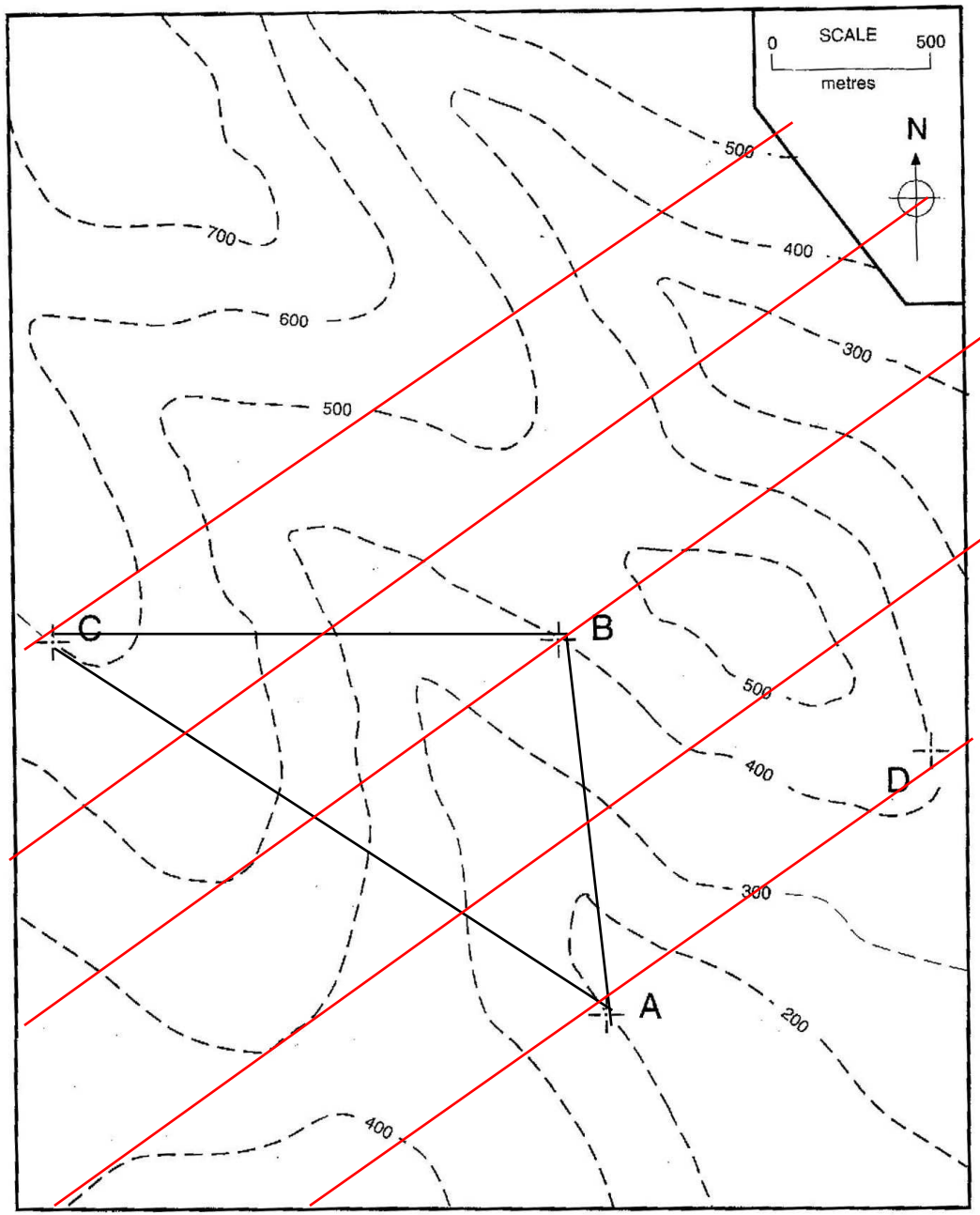
4、编制倾斜岩层地质图



Map 6 Deduce the dip and strike of the coal seam which is seen to outcrop at points A, B and C. At what depth would the seam be encountered in a borehole sunk at point D? Complete the outcrops of the seam. Would a seam 200 m below this one also outcrop within the area of the map? Contours in metres.



MAP 6 Deduce the dip and strike of the coal seam which is seen to outcrop at points A, B and C. At what depth would the seam be encountered in a borehole sunk at point D? Complete the outcrops of the seam. Would a seam 200 m below this one also outcrop within the area of the map? Contours in metres.



MAP 6 Deduce the dip and strike of the coal seam which is seen to outcrop at points A, B and C. At what depth would the seam be encountered in a borehole sunk at point D? Complete the outcrops of the seam. Would a seam 200 m below this one also outcrop within the area of the map? Contours in metres.

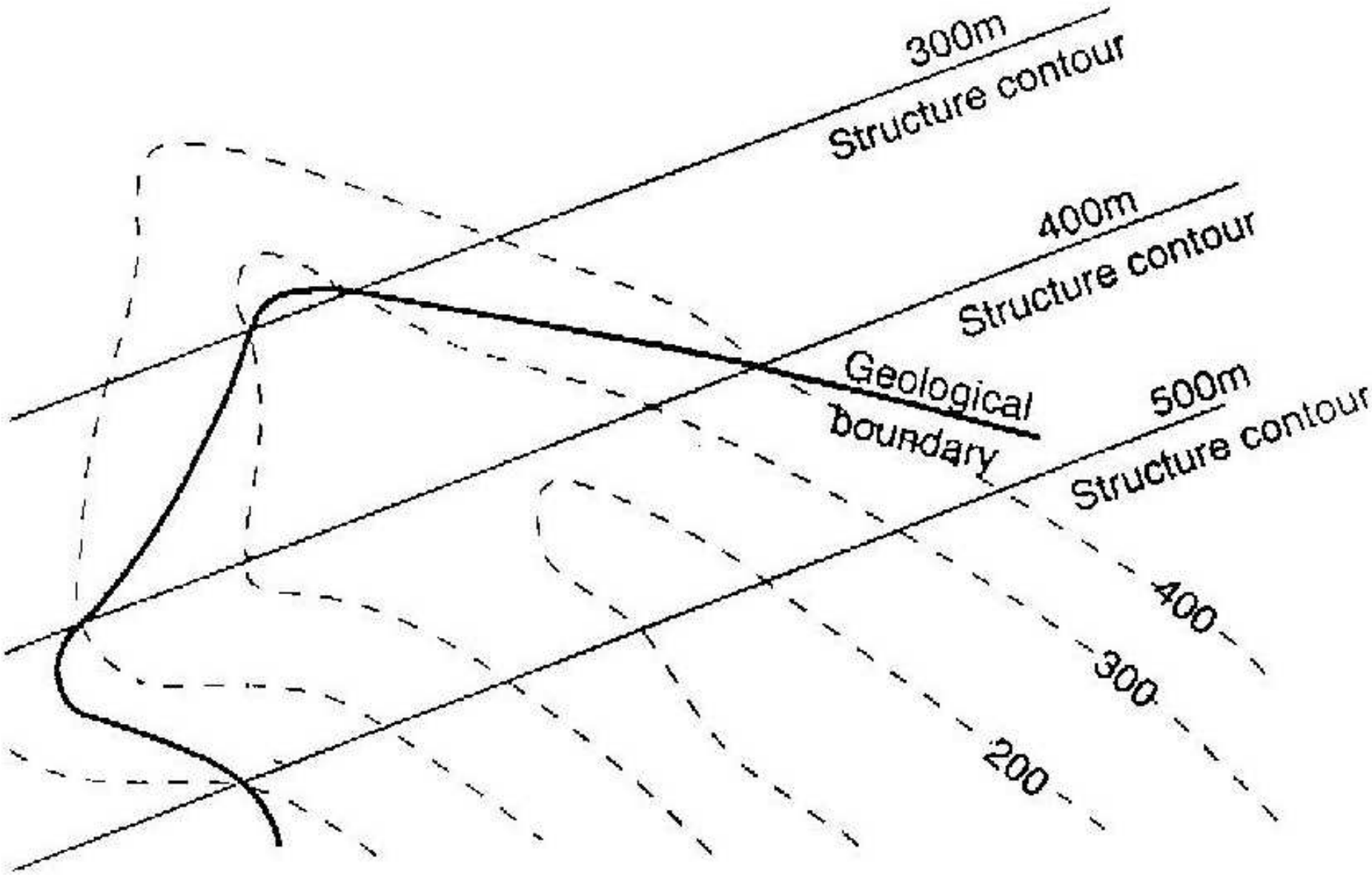
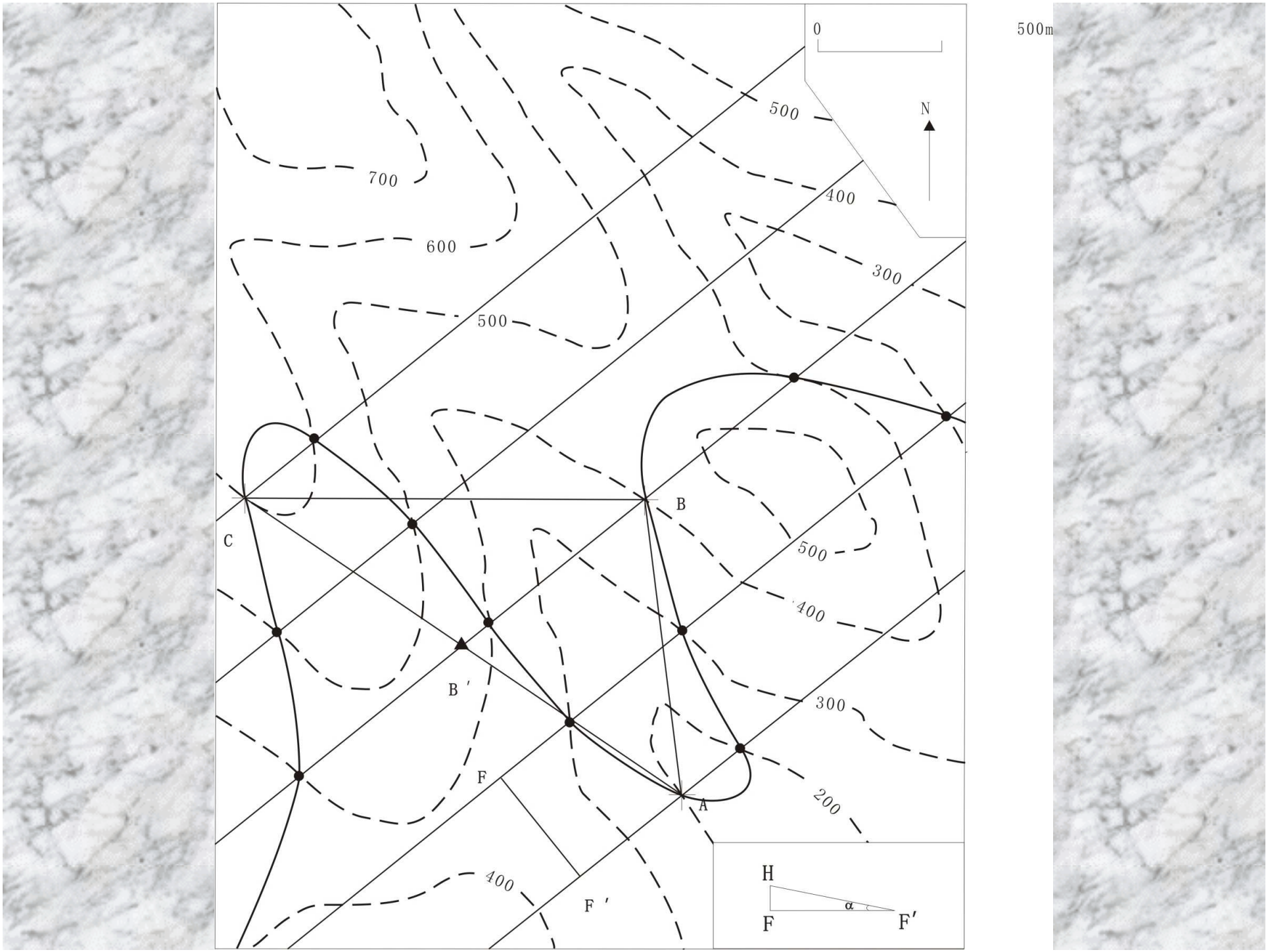
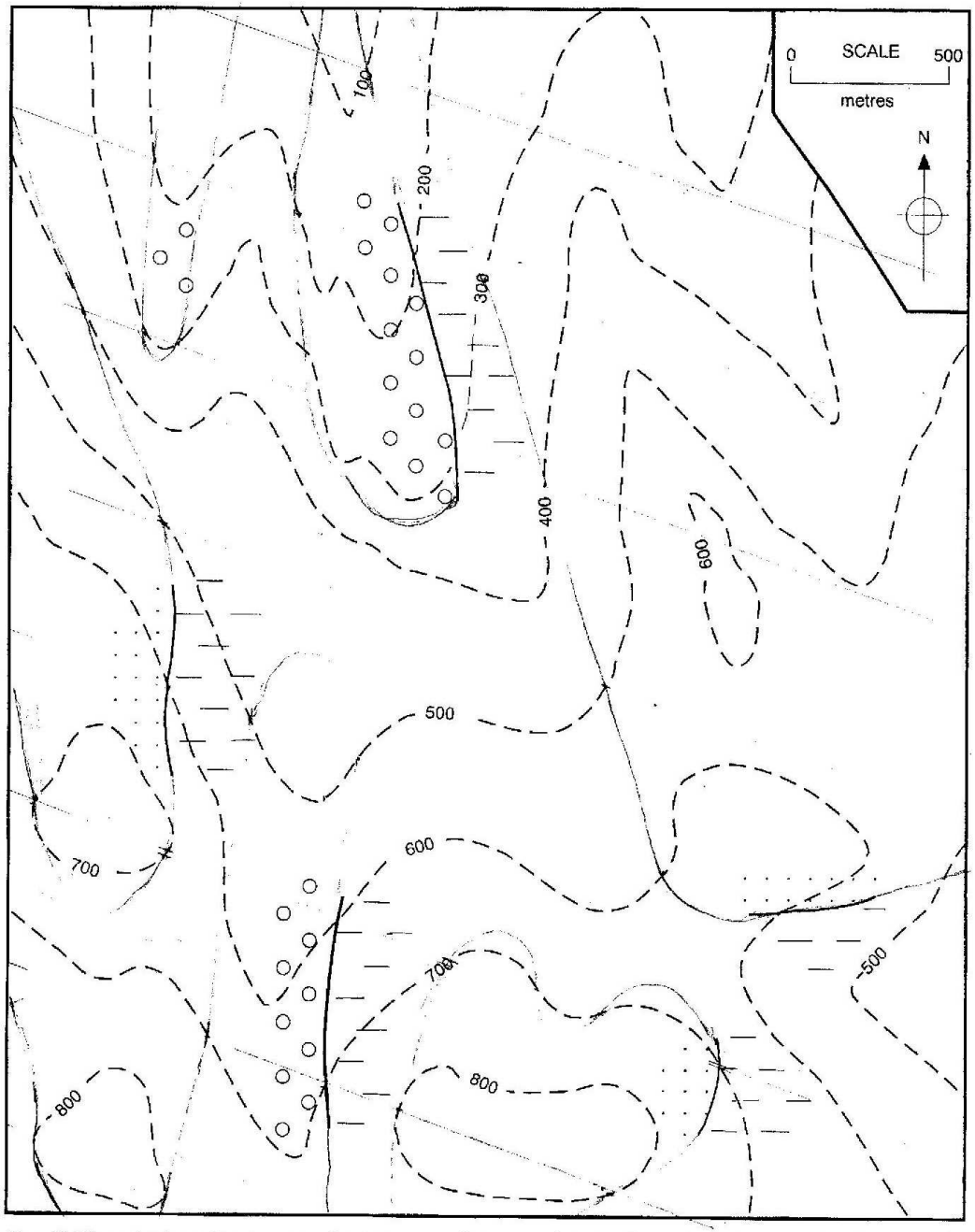


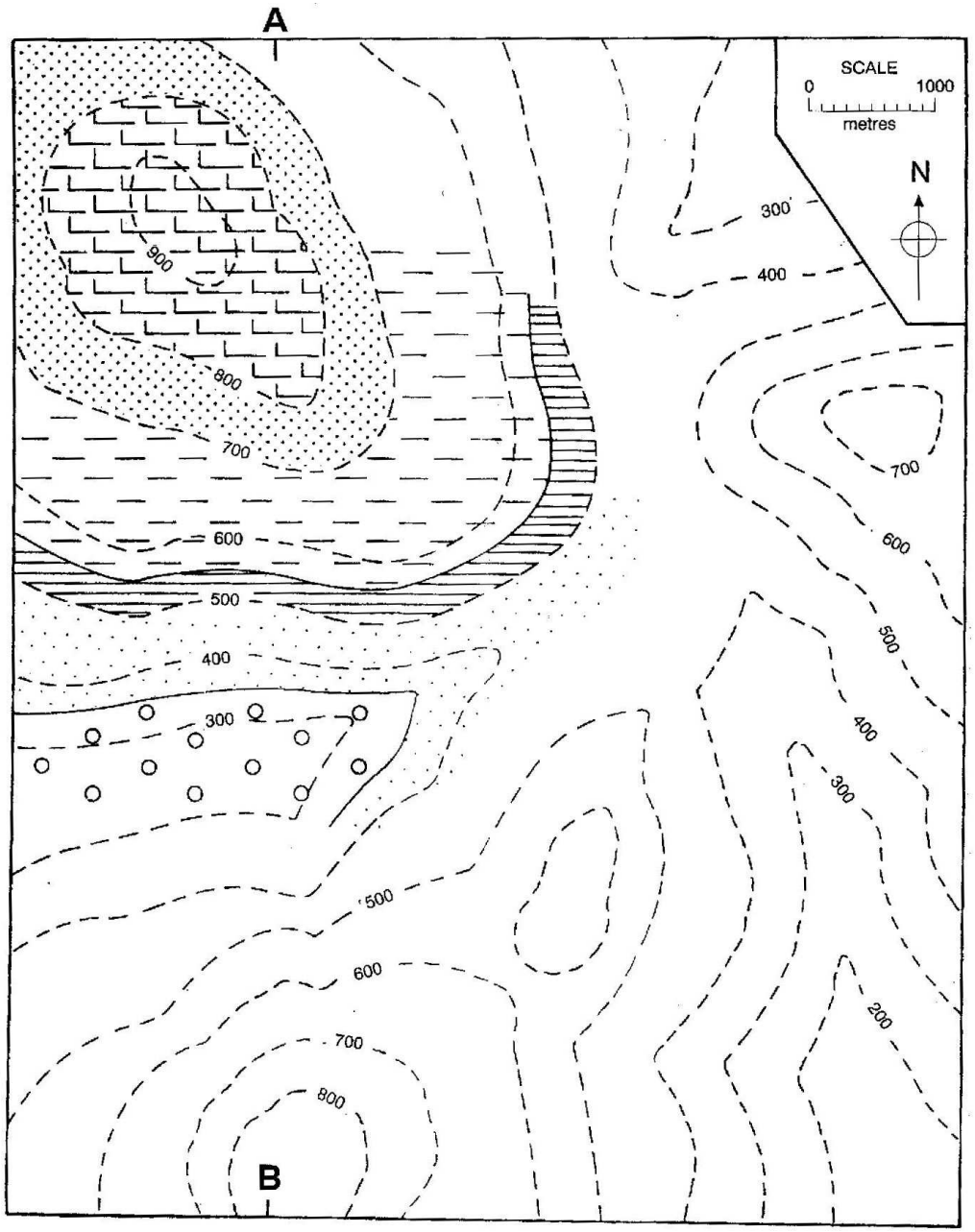
FIGURE 9 The insertion of a geological boundary on a map with topographic contours and structure contours.


0
500m
N
700
600
500
500
400
300
B
C
500
400
B′
300
F
200
A
400
F′
H
α
F
F′



Map 8 Three beds outcrop – conglomerate, sandstone and shale. Complete the geological boundaries between these beds, assuming that the beds all have the same dip. Indicate on the map an inlier and an outlier.

P28



Map 1 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. Indicate the position of a spring-line on the 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. (Contours in metres.)