



FIGURE 14.12

Block diagram to be completed for Problem 3.

- (5) Label the hanging wall and footwall on the top and side faces.
  - (6) With Side 1 up, number the beds in order of age, with 1 the oldest. Are the beds at the surface of the upthrown block generally older or younger than those at the surface of the downthrown block? Why?
  - (7) What kind of fault is this?
3. Figure 14.12 is a block diagram showing a fault and a number of folds. The front face of this diagram is perpendicular to the strike of these features, so you can easily measure the dip of the fault and bedding planes where indicated. North is into the page, west and east are marked.
- a. Use a protractor to measure the dip angles along a single fold at points 1 through 5 on the front face of the diagram. Horizontal lines indicate the precise location for each measurement.
 

1.	2.	3.	4.	5.
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  - b. A geologist would take strike and dip measurements at convenient outcrops on the surface. Take dip measurements along the front of the block diagram, as close to the surface as possible. Put the appropriate strike and dip symbols in the six white ovals along the top of the diagram, and write each dip measurement in the appropriate spot.
  - c. Draw dashed axial traces for the three folds not cut by a fault. Put them along both the vertical and horizontal surface, and include the appropriate symbol from Figure 14.4.
  - d. What type of fault is illustrated? Be sure the correct map symbol is used to indicate dip. Put arrows on the vertical surface and map symbols on the horizontal surface to indicate the relative sense of motion across the fault.
4. Partially completed block diagrams are shown in Figure 14.13. Using the information provided for each diagram, fill in the blank faces on the blocks and answer the questions.
- a. The vertical column on the front face of Figure 14.13A shows the different rock units encountered in an old oil well.
    - (1) Use the available information to help you complete the diagram.
    - (2) What kind of fold is this (anticline, syncline; upright, inclined, overturned, or recumbent; plunging or non-plunging)?
    - (3) Illustrate the position of the axial surface of the fold by sketching its trace on the top and end of the block (the **trace** is the imaginary line formed where the axial surface intersects another surface).