True dip: maximum dip angle of a plane measured in vertical section perpendicular to the strike line.

Determine strike and dip from two apparent dips

Example: A fault trace is exposed in two adjacent cliff faces. In one wall the apparent dip is15°, S50°E, and in the other it is 28°, N45°E (Fig.1-a).What is the strike and dip of the fault plane?

Solution: (Fig.1-b)

1-Use the two trend lines, OA and OC, as fold lines. Also, use a vertical line of arbitrary length **d.**

Draw the two trend lines in plan view.

2-From the junction of these two lines (point O) draw apparent dip angle α1 and α2.

3-Draw a line of length (d=**h)** perpendicular to each of the trend lines to form the triangle COZ and AOX. The value of d must always be drawn exactly the same length because it represents the depth to the layer along any strike line.

4- Triangles COZ and AOX Folded up into plan view with the two apparent-dip trend lines used as fold lines. In Fig.1-b, line AC is horizontal and parallel to the fault plane; therefore it defines the fault's strike.

5-Line OB is then plotted perpendicular to line AC; it represents the direction of true dip.

6-Using line OB as a fold line, triangle BOY (Fig.1-b) can be projected into the horizontal plane, again using length **d** to set the position of point Y. The true dip can now be measured directly.

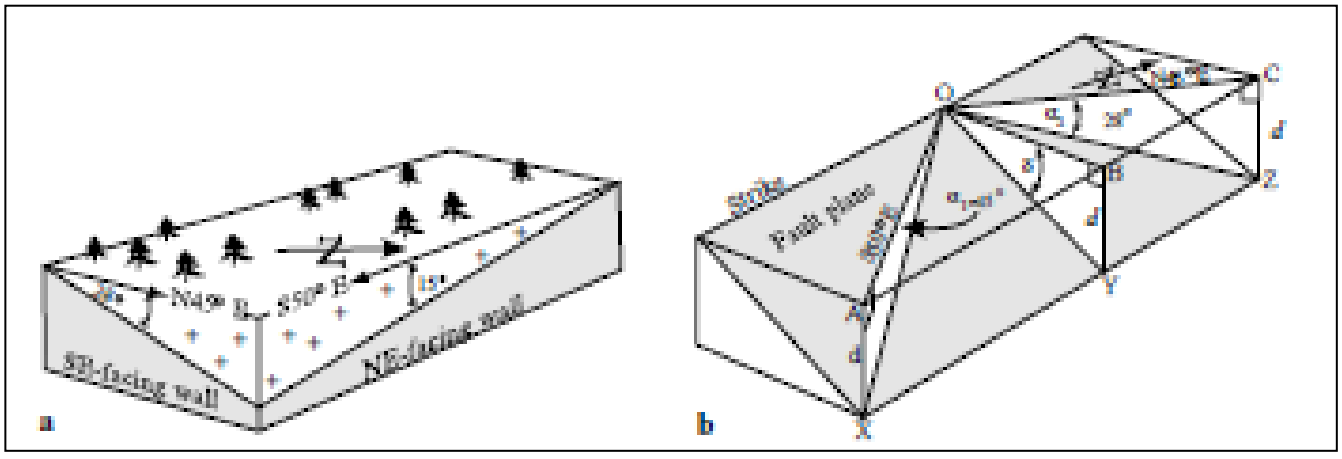

Fig.1 :(a) Block diagram. (b)Block diagram showing triangles involved in orthographic projection and trigonometric solutions

Exercise: Find the true dip and strike for the following pairs of app. dips.

First app. dip	Second app. dip
a) 078°/28°	**S05W°/23°**
b) N61°W/31°	**N55°E/18…… (H.W.)**