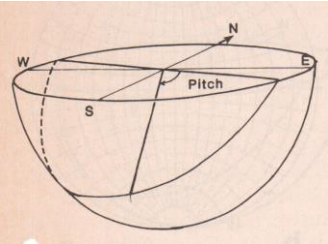
projecting a line onto a plane & finding the pitch (rake) angle

Pitch (rake) angle: is the angle between the linear structure in the plane and strike (horizontal) line of the plane, and its measured in the same plane which contains the linear structure.



I): Finding the pitch angle of the linear structure

***Exercise:1*) Draw these lines onto theirs planes and then find the pitch angles of these lines.**

No.	*Attitude of the planes*	*Orientation of the lines*	*Pitch angle*
1	110/46NE	69/34	
2	N45E/50	110/28	
3	225/62	292/36	
4	176/82NE	160/62	
5	68/72	N16W/21	
6	S62W/34SE	N86E/16	

The plotting procedure

1. Plot the plane as a great circle on the tracing paper. (The method is explained in the Lab.1)
2. Plot the line. (The method is explained in the Lab.1)
3. Rotate the overlay to a position in which the great constructed.
4. Starting from the primitive circle, count out the angle of pitch inwards along the great circle.

II): Finding the attitude of a line from known pitch angle

***Exercise :2)* find the trend and plunge of these lines from given data.**

No.	*Attitude of the planes*	*Pitch angle*	*Orientation of the lines*
1	015/30SE	38°S	
2	N38E/42NW	70NE	
3	155/15NE	22NW	
4	105/11	87SW	
5	N54W/33	26SW	
6	S85W/45SE	63NE	

The plotting procedure

1. Plot the plane 015/30SE as a great circle on the tracing paper.
2. Rotate the overlay to a position in which great circle constructed.
3. Starting from the primitive circle, count out the angle of pitch (here, 35°) inwards along the great circle. This gives the plotted position of the line.

***Note* that the pitch is 35°S, the 'S' indicating that the pitch is measured downwards from the southern end of the strike line of the plane. This is why we start our counting from the southern end of the great circle.**