

## GLY 364: Practical 04

### STEREOGRAPHIC PROJECTIONS

- 1) The apparent dip of a fault is measured as  $30^\circ$  and  $25^\circ$  in each of two vertical faces of an opencast mine which strike at  $30^\circ$  and  $320^\circ$  respectively. Determine the true dip and strike of the fault. *is one line of a stereograph*  
*True dip  $25^\circ$  strike  $40^\circ$*

- √2) The poles of two joint systems are recorded as follows:

	Dip	Dip Direction	from
J1	$40^\circ$	$150^\circ$	
J2	$60^\circ$	$200^\circ$	

Determine the dip and direction of the intersection between the two joints.

*$30^\circ$   $039^\circ$*

- 3) Two boreholes are drilled from the face of a quarry, one at an orientation of 278/38 (trend/plunge), and the other at an orientation of 055/72. *trend & plunge*  
*folds*

Plot the points corresponding to these boreholes and then determine:

- the orientation of the plane containing the two boreholes,
- the acute and obtuse angles between the two boreholes
- the orientation of a borehole which bisects the acute angle: and
- the orientation of a borehole which is perpendicular to the two holes already drilled.

- 4) Draw a friction cone normal to a joint plane.

- 5) Draw a daylight envelope.

- 6) Consider planar failure taking both daylighting and friction into account.

- √7) A quarry face with orientation 030/60SE *strike dip* is cut by two joint sets: A 050/70SE and set B 160/70NE.

Plot these features on a stereogram and discuss the possibility of wedge failure.

*→ dip & dip direction, stable/unstable?*

- mark  $30^\circ$  strike, draw a straight line through it and rotate straight line N/S, and count the dip from the E  
*∴ get a SE*