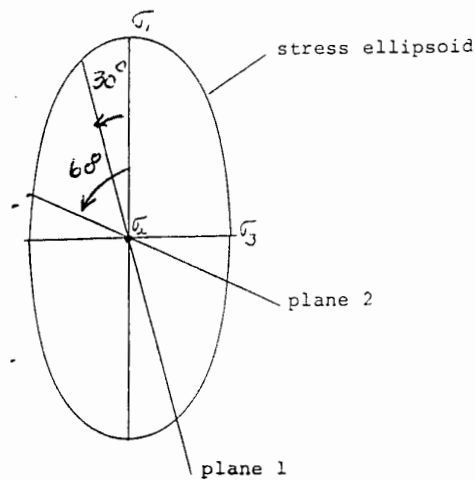


12.113 Exam

1. Discuss briefly how the environmental variables of confining pressure, temperature and strain-rate affect the behavior of rock deformation.

2. Explain why determination of the principal finite strain axes and orientation of the finite strain ellipsoid may tell us very little about the nature of a deformation

- 3) Describe by using Mohr circles how τ and δ vary from plane 1 to plane 2 in the diagram given below.



These two planes have the same shear stress, however, a shear fracture will occur only on plane 1 and not on plane 2 when the values of tau and sigma are appropriate for fracture to occur. Why?

4. Show the general state of stress in the different parts of the geological map shown below. Explain why it is different in the different parts of the map. What does this suggest about the concept of a uniform regional stress field?

