

2nd Mid-Exam

Question #1:

- On τ - σ plot, show the failure envelopes for clay obtained from drained direct shear test for N.C.C and for O.C.C.
- Drive the following relationship:

$$K_a = \tan^2\left(45 - \frac{\phi}{2}\right)$$

Question #2:

Following are the results of three drained direct shear tests on N.C.C :

Sample size: diameter of sample = 50 mm

Height of sample = 25 mm

Test No.	Normal force(N)	Shear force at failure (N)
1	200	156
2	350	275
3	420	330

Draw a graph for shear stress at failure against normal stress. Determine the Drained angle of friction from the graph.

Question #3:

For the retaining wall shown below, determine the active force per unit width of the wall for Rankine state. Also find the location of the resultant.



