Prince of Songkla University

Faculty of Engineering

Final Examination: Semester II — Academic Year: 2005
Date: February 24th, 2006 — Time: 09.00-12.00 a.m.
Subject: 235–402 Geotec for Mining Engin./Geotech — Room: R 200

Instructions

1. Attempts questions (4) in 6 pages.
2. Answer all questions in this given papers and do rear papers allowed
3. All books and materials (Handheld non-programmable electronic calculators) are allowed
4. Write your name in each page and returned all papers to controllers
5. Total marks are 110 points or 35 % of subject.

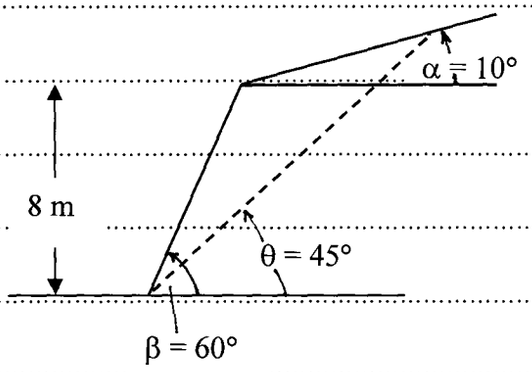
Question Number	Full Scores	Assigned Scores
1	30	
2	25	
3	25	
4	30	
Total scores	110	

"ทุจริตในการสอบ โทษขั้นต่ำปรับตกในรายวิชานั้น และพักการเรียน 1 ภาคการศึกษา สูงสุด ให้ออก"

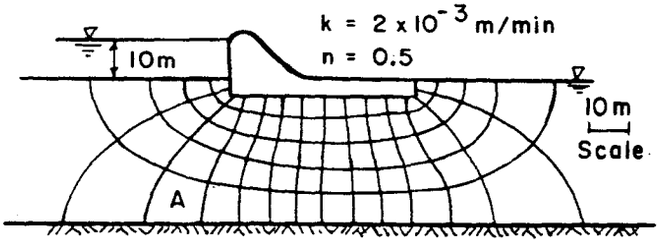
Name ..... **Surname** ..... **ID** .....

Bonne Chance et bon courage
Danupon Tonnayopas
Instructor
21 February 2006

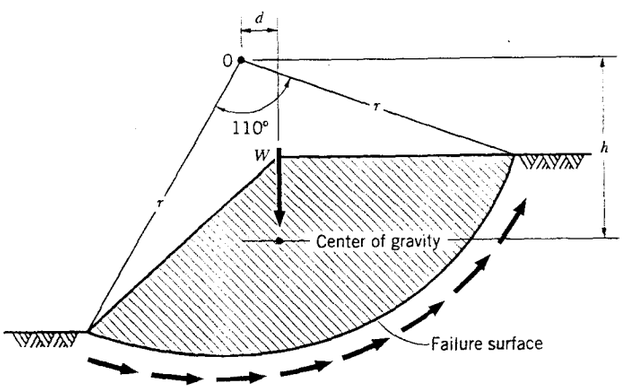
1. A cut slope is to be excavated to a depth of 8 m in sandstone with dip of bedding plane toward the excavation at a slope of approximately 45°. Determine the safety factor of the 60° slope with 10° upper slope, as shown. Direct shear test were run on samples to evaluate $\phi = 30°$, $c = 15$ kN/m^2 and its unit weight $\gamma = 20$ kN/m^3 (30 points)



2. From the flow net shown below find (25 points)
   a) The flow (q) through the net.
   b) The pore pressure (u) in the middle of square A.
   c) The actual velocity in the middle of square A.

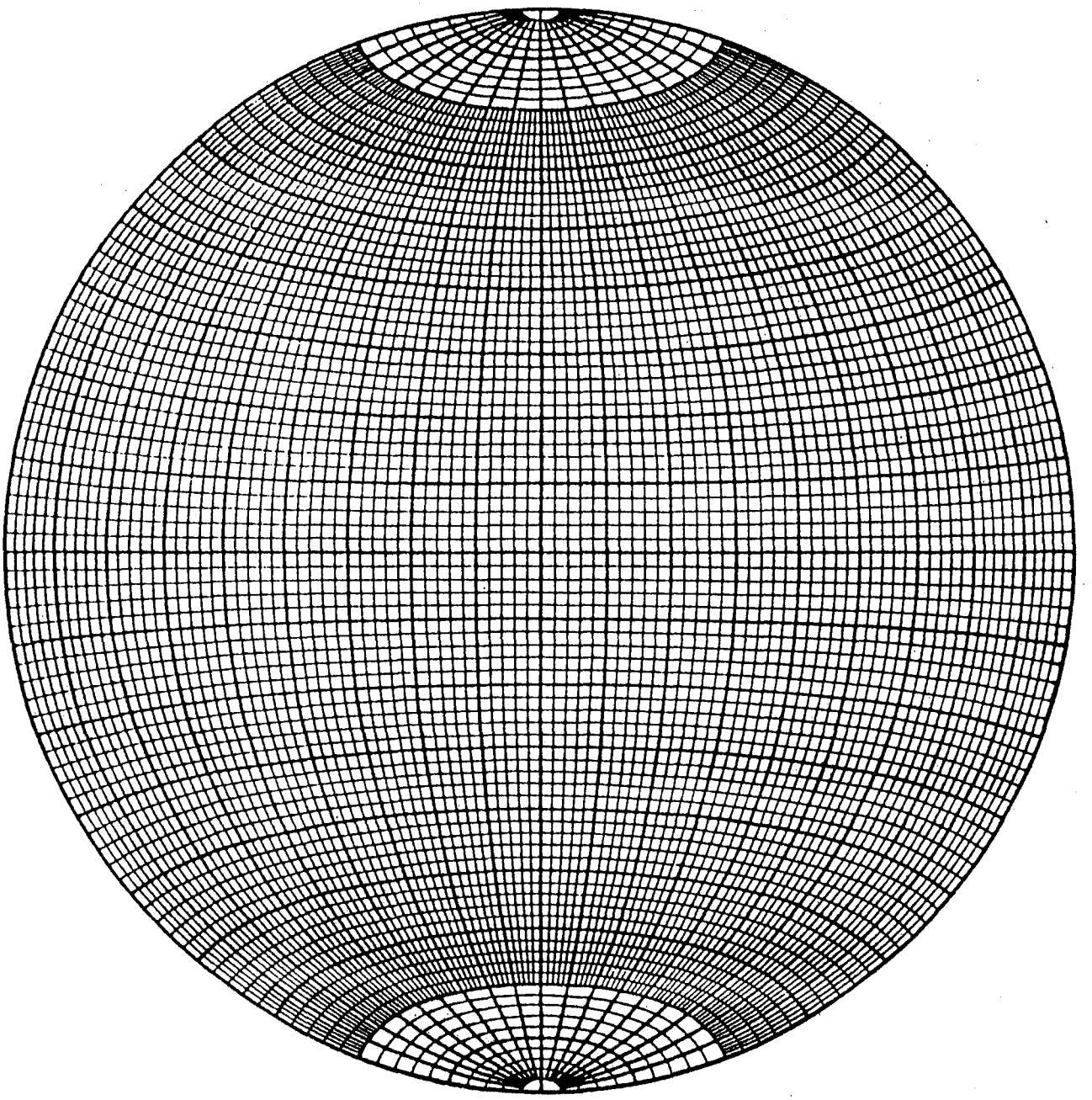


3. For the slope shown below, assume the following data; W = 3600 kN, r = 15 m, d = 3.3 m, c = 32 kN/m^2, and ϕ = 0. Determine the safety factor against sliding on the circular surface shown? (25 points)



4. From data below evaluate slope stability by using stereo net projection.
Joint # 1 = 328°/60°; Joint # 2 = 240°/55°; cut slope 270°/60°; friction angle 45°. (30 points)

Name .....*Surname*.....*Student ID* .....



SCHMIDT MERIDIONAL NET