

GEOL 360
Structural Geology

Name _____

Date _____

Problem set #5

*Show your work and turn in your stereonet plots with this lab. (Please use a separate overlay for each of the problems.)

In this lab, continue to learn the basics of Stereonet Techniques. Stereonets are a way of representing lines and planes oriented in three dimensions, on a two dimensional surface (i.e. a piece of paper). Structural geologists use stereonet for a variety of different things, and you will find that we use them on practically every lab in this class.

Problem 1.

a) The strike and dip of a sandstone bed is N55°E, 30°SE. Plot the great circle representing this plane.

b) Plot the pole to this plane. What is the plunge and trend of this pole?

Problem 2.

a) The strike and dip of a shale bed is N17°E, 65° SE. A foliation (a planar structural surface--more on this later) in the shale has a strike and dip of N37°E, 74° S. What is the orientation of the "intersection lineation" (the line of intersection) of these two planes?

Problem 3.

a) Elongate coprolites in the Bush Formation lie in the bedding. The plunge and trend of three of these are 46° S86°E, 29° N62°E, and 32° S2°W). Plot the great circle representing the plane of bedding. What is the attitude of the bedding?

Problem 4.

a) Two mineral lineations are oriented $48^\circ \text{ S}20^\circ\text{E}$ and $65^\circ \text{ S}18^\circ\text{E}$. What is the angle between these two lines?

Problem 5.

a) What is the angle between the following two planes?

1) $\text{N}55^\circ\text{E}$, 40°NW and

2) $\text{N}65^\circ\text{E}$, 35°SE

Problem 6.

The strike and dip of a sandstone bed is $\text{N}50^\circ\text{E}$, 44°NW .

a) What is its apparent dip in the direction $\text{N}75^\circ\text{W}$?

b) In the direction $\text{N}40^\circ\text{W}$?

Yet another sandstone bed strikes $\text{N}36^\circ\text{E}$.
It has an apparent dip of 54° in the direction of $\text{N}80^\circ\text{E}$.

c) What is the beds strike and dip?

Problem 7.

a) The strike and dip of a sandstone bed is $\text{N}18^\circ\text{W}$, 70°NE . A mineral lineation on it rakes 30°N . What is the orientation of this lineation?
