

### G302 Trigonometric Applications In-Class Exercise

Three “outcrop” stations are set up in the 218 Lab. The stations are comprised of planar boards that represent layered beds of sedimentary rock. The beds are of variable orientation at each outcrop locality (locality A, B, and C). Using the brunton compasses provided, measure the strike and dip of each bed. Your strike should be in azimuth, relative to the northern hemisphere, dip will be oriented perpendicular to strike. Also using the compasses, measuring the azimuth bearings between each locality. You are able to measure the room distance between station B and C only. Assuming that the room is a model of the earth surface with a scale of 1:12,000, fill in the data tables below. Remember to use your trigonometric functions to solve for angles and distances between stations (e.g. tan, cos, sin, 180 degree rule, sine rule, and law of cosines).

Outcrop	Strike	Dip	Line	Azimuth Bearing	Room Dist (ft)	Ground Dist (km)
A	_____	_____	A→B	_____	_____	_____
B	_____	_____	B→C	_____	_____	_____
C	_____	_____	A→C	_____	_____	_____

In the space below, draw a sketch map of the geometric and trigonometric relations between the stations that you used to fill out the chart above. Show all of your math work.