

# Assignment 1

Please type your responses into a word document, and submit that on UNM Learn. Be sure to number your responses 1, 2(a), etc. so I know which question you're answering, and show all work for partial credit.

1. (2 points) *Give four arguments that the Earth is round.*
2. (10 points) *Polaris is very near the North celestial pole. How can you use this information to find your latitude at sea on a clear night if you're in the Northern hemisphere? Show your derivation, and include a picture if necessary (you can take a picture with your phone or draw something in paint—don't spend too much time on the picture).*
3. (10 points) *Suppose Eratosthenes found that the length of the shadow of the column and its base made an angle of  $30.0^\circ$  from the top of the column at Alexandria when the bottom of a well 882 km away by foot was sunlit. What would he have measured for the diameter of the Earth (with correct sig. figs)?*
4. (5 points) *By what factor would a person's weight decrease if Earth's radius doubled, but its mass stayed the same?*