For each of these problems, create a diagram in Geogebra to help you explain the solution, and paste it into a Word document (and format it appropriately). Write up a (textbook quality) solution, complete with diagram.

(12 pts) 1. Find the measure of an interior angle of a regular pentagon.

(There are at least 3 different ways to solve this one—you only need one, but you need to show the geometric reasoning, not just using a formula).

(10 pts) 2. A ladder 5 m. long leans against a wall. The foot of the ladder is 3 m from the base of the wall. How far up the wall does the ladder reach?

(10 pts) 3. The angle of elevation from a ship at sea level is . If the ship is 2.3 km out at sea from the cliff, find the height (in meters) of the cliff.

(10 pts) 4. A rectangular sheet of cardboard measures 16cm by 6cm. Equal squares are cut out of each corner and the sides are turned up to form an open rectangular box. What is the maximum volume of the box?

(10 pts) 5. Make up a problem of your own for which a diagram would be helpful (something appropriate for a high school math class). Write up the problem, with an accompanying diagram. (You don’t have to write up the solution for this one, but try to make it solvable—I’ll probably have you trade problems with a partner to solve!)