

48-175 Descriptive Geometry Assignment 2

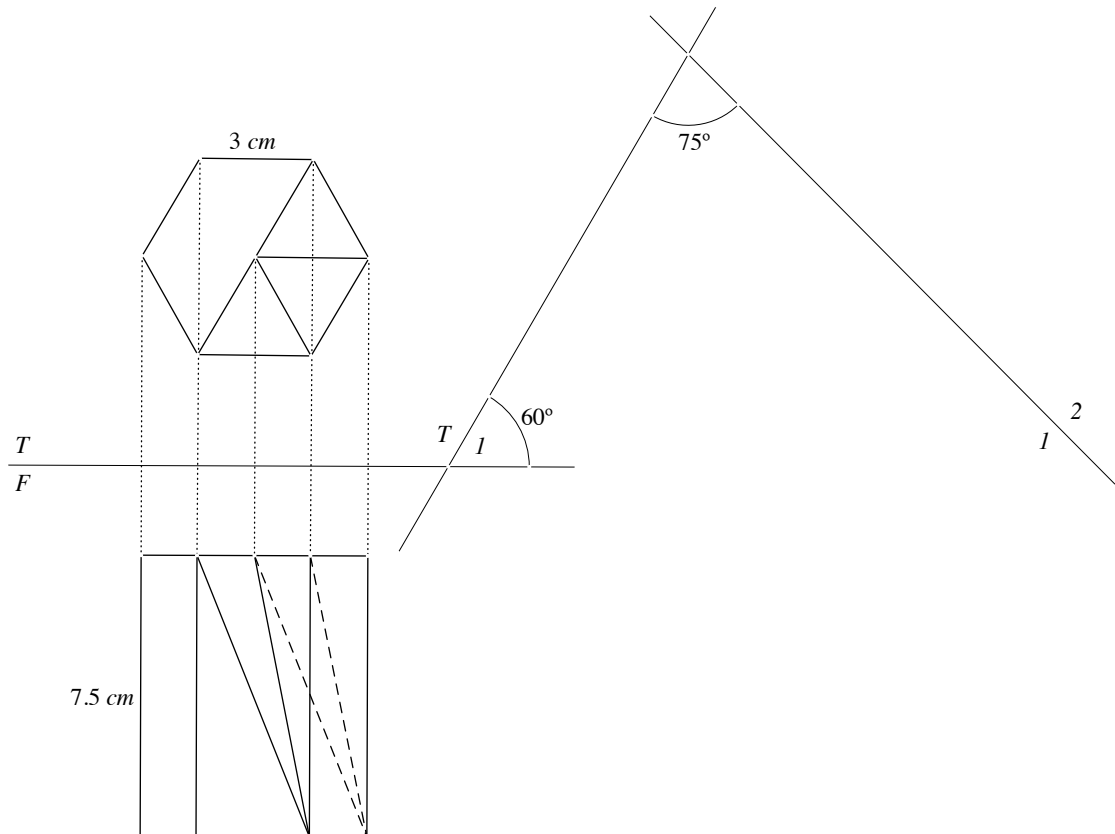
Due Date February 16, 2016

Write your name on each sheet of your assignment answers

Draw your constructions as neatly as possible, and definitely, as accurately as possible.

1. Below you are given the top and front views of a regular hexagonal prism and the location of folding lines T | 1 and 1 | 2.

Draw the required auxiliary elevation and inclined views



2. The Ranger moon probe contained cameras that obtained close-up photographs of the moon. The cameras were housed in an aluminum shroud with a conical surface. The shroud was opened in such a way that the camera's field of view would not be obstructed. This opening is established by cutting the conical surface of the shroud along two flat planes as shown in the given front elevation. See **Drawing for Question 2**.

Construct the plan and left-side elevation views of the shroud showing the opening in both views

3. You are given two pipes each 3" in diameter. Call the centerlines of the pipes *AB* and *CD* respectively. Point *B* is located 2' east and 3' north of *A* and 2' below *A*. *C* is located at the same elevation as *A* and is located 1'6" east 1'6" north of *A*. *D* is located 1' west 3' north of *A* and 2' below *A*. Use a scale of 1" = 1'-0". How much clearance, if any, is there between the pipes? [HINT: Take diameter of the pipe into consideration in working out clearance.]

4.

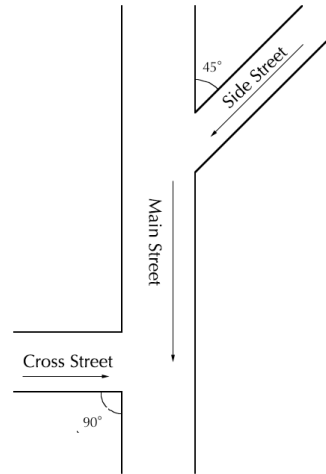
See the illustration on the right.

A sewer line under Side Street slopes downward at -15° until it reaches another sewer line under Main Street, which slopes downwards at -30° .

What is the true size of the angle between the two sewer lines?

A newer sewer line sloping at -25° under Cross Street intersects the Main Street sewer line.

What is the true size of the angle between these two sewer lines?



5. A Qatar Airline plane is at A at an elevation of $1500'$, bearing $S 45^\circ W$, with a speedometer reading of 120 miles per hour. It is gaining altitude at $2100'$ per minute. From A it spots a ship at bearing $S10^\circ E$ on a 40° angle of depression. Twenty seconds later it spots the ship again this time at bearing $N 60^\circ E$ on a 45° angle of depression. $1 \text{ knot} = 6080'$ per hour. Use a scale of $1'' = 1000'$

Assuming that the ship's course is steady (i) *What is its bearing and speed in knots?*
 (ii) *How far has it traveled?*

Name _____

Drawing for Question 2

