

Name _____

Homework Assignment 1 (Due: Friday, September 5)

Please hand in this homework pamphlet as a cover sheet with your answers (everything will be returned once graded). Be sure to list all assumptions and show all your work. Any information that is determined from the attached figures must be clearly indicated on the appropriate figure. Credit will only be assigned if it is clear how each problem was solved.

1. The following data were recorded at a rain gage during a storm event:

<u>Time (min)</u>	<u>Rainfall (inches)</u>
0	--
5	0.05
10	0.18
15	0.35
20	0.40
25	0.33
30	0.26
35	0.20
40	0.10
45	0.05
50	0.01

Based upon the first reading assignment posted on the web page, and using Excel or another spreadsheet application, perform the following tasks. The spreadsheet should be well organized and it should be clear what is being presented. Each figure should be labeled, the axes should have the proper units, and final answers should be clearly indicated (using bold font or a callout box).

- a. Plot the incremental rainfall hyetograph.
 - b. Compute and plot the cumulative rainfall hyetograph, which is a plot of cumulative rainfall (in) vs. time.
 - c. Calculate the maximum depth and intensity recorded in 10, 20, and 30 minute intervals for this storm.
2. Based upon the results from part 1, answer the following questions:
 - a. What was the total rainfall depth observed during this storm event?
 - b. What was the most intense 10-minute duration of rainfall during the storm (i.e. which of the following 10 minute periods has the greatest rainfall intensity: 0-10 minutes, 10-20 minutes, 20-30 minutes...)?
 - c. What was the rainfall intensity during this 10-minute duration?

Homework Assignment 1 (Due: Wednesday, September 5)

3. During a recent storm event rainfall amounts were recorded at five gages while a sixth gage did not record properly. Using the information provided in the figure below estimate the rainfall depth at the sixth gage using the four methods presented in class (station averaging, normal ratio, isohyetal, and quadrant).

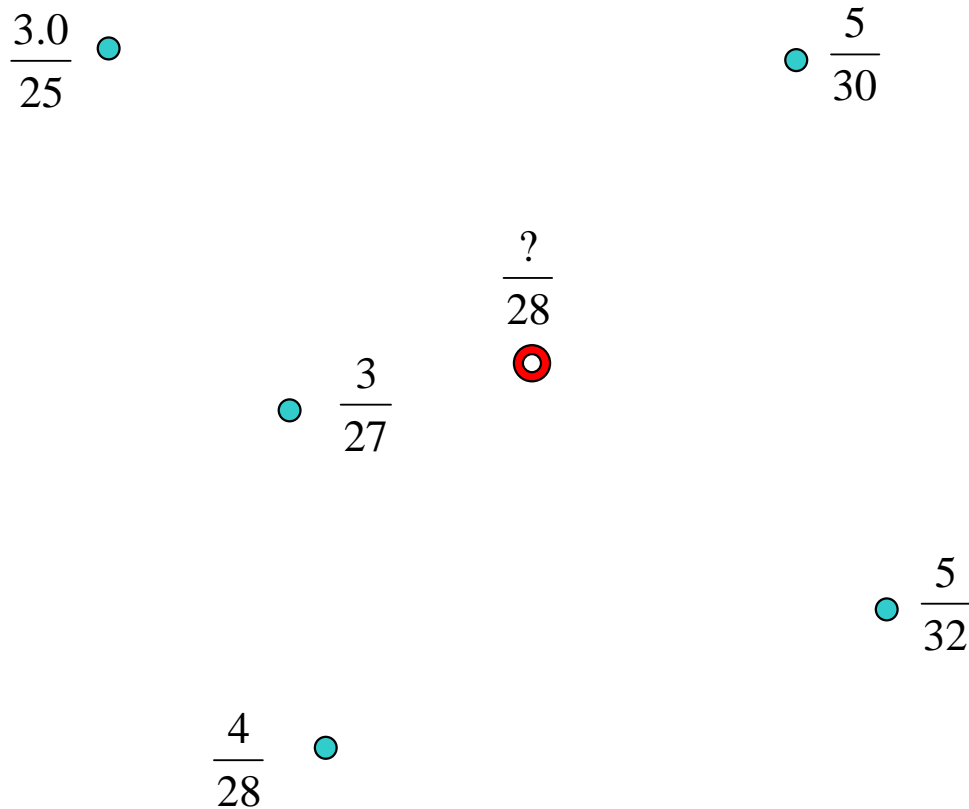


Figure 2. Rain gage locations. Note: the value in the numerator is the recorded rainfall depth (cm) during a recent storm event, while the value in the denominator is the average annual rainfall at each location (cm).