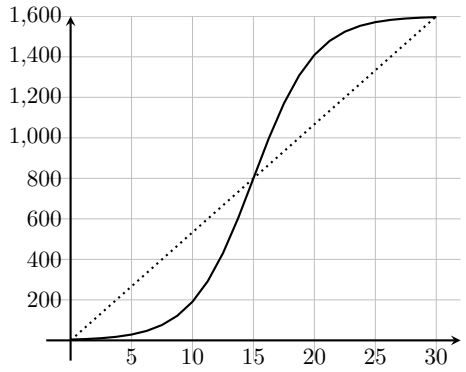
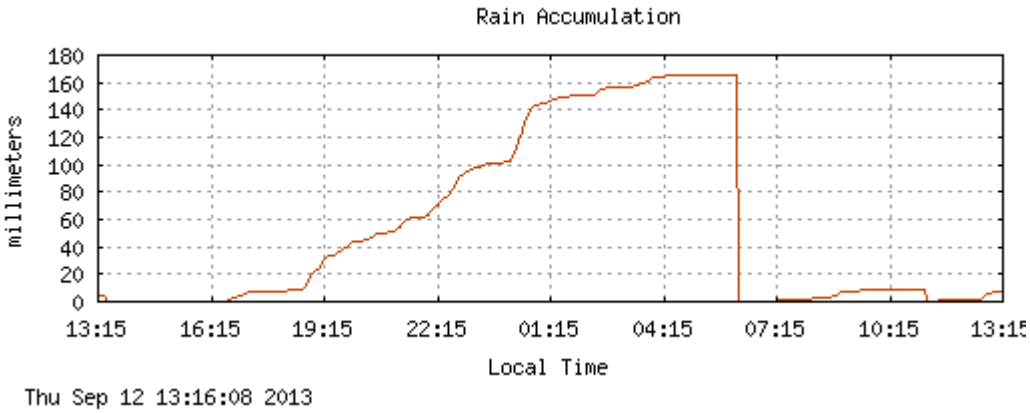
G1. The solid curve in the graph below gives position s of a car along a straight roadway (measured in meters), as a function of time t (measured in seconds).



a. Find the slope of the dotted line in the graph above. Explain (including units), what this slope represents.

b. Estimate the instantaneous velocity at $t = 15$. Include units. Draw and label the line you used to estimate this.

G2. Below is plot of the rainfall accumulation from the 2013 Boulder flood taken from the Foothills Lab Weather Station. The rainfall is measured in millimeters.



a. Use the graph to estimate the average rainfall rate between 04:15 pm (marked as 16:15 on the graph) and 4:15 am the next morning (marked as 04:15 on the graph). Show all work and include units. Draw the line that you are finding the slope of.

b. When is it raining hardest? Explain how you know.

c. Estimate the rainfall rate at 22:15 (include units). Draw the line that you are finding the slope of.

d. What does the graph indicate is happening to the rainfall during the hour after 4:15 am?

e. Explain the precipitous drop between 04:15 and 07:15.