Q1.

The data set named "trees" contains measurements of the girth, height and volume of timber in 31 felled black cherry trees. Note that girth is the diameter of the tree (in inches) measured at 4 ft. 6 in above the ground.

Girth	:Numeric Tree diameter in inches
Height	:Numeric Height in ft
Volume	:Numeric Volume of timber in cubic ft

a) Load the data set in the package "datasets".

b) Carryout a descriptive analysis for the above variables and comment on your findings.

c) Construct 95% confidence intervals for the variables "Girth" and "Height" and interpret your results.

d) A researcher claims that the average height of black cherry trees is lesser than 72 ft. Formulate suitable hypotheses to test the researcher's claim. Assuming the height is normally distributed test the validity of the researcher's claim and interpret your results.

Q2.

Do good smells bring good business? Businesses know that customers often respond to background music. Do they also respond to odors? Nicolas Gueguen believes that good smells bring good business. Nicolas Gueguen and his colleagues studied this question in a small pizza restaurant in France on Saturday evenings in May. On one evening, a relaxing lavender odor was spread through the restaurant and another evening was served as a control, with no odor. The table 2 shows the amounts (in euros) that customers spent on each of the evenings. (Assume that these data may be deemed to be random samples from normal populations with the same variance.)

Table 2

NO ODOR									
15.9	18.5	15.9	18.5	18.5	21.9	15.9	15.9	15.9	15.9
15.9	18.5	18.5	18.5	20.5	18.5	18.5	15.9	15.9	15.9
18.5	18.5	15.9	18.5	15.9	18.5	15.9	25.5	12.9	15.9

LAVENDER ODOR									
21.9	18.5	22.3	21.9	18.5	24.9	18.5	22.5	21.5	21.9
21.5	18.5	25.5	18.5	18.5	21.9	18.5	18.5	24.9	21.9
25.9	21.9	18.5	18.5	22.8	18.5	21.9	20.7	21.9	22.5

a) Carryout a descriptive analysis for the two samples and comment on your findings.

b) Construct 95% confidence interval for this incident and interpret your results.

c) Investigate Nicolas Gueguen's belief by formulating a suitable hypothesis and interpret your results.