BTS Airline On Time Performance Data – Stagelength and Gate-to-Gate Velocity

1) Generate Histogram of Stagelength for flights FROM Your Airport
    a. Histogram instructions:
        i. Y-Axis: # flights per time period investigated (e.g. month)
        ii. X-Axis: Stagelength in 250 nm increments (i.e. 0, 250, 500, 750 , …….3000)
    b. Convert the histogram to Probability Denisty Function (PDF)
        i. Y-Axis: % flights per time period investigated (e.g. month)
        ii. X-Axis: Stagelength in 250 nm increments (i.e. 0, 250, 500, 750 , …….3000)
    c. What is mean Stagelength
    d. What is median Stagelength
    e. What is Standard Deviation for Stagelength
    f. Is the distribution Normal? How can you test for normality?
2) Generate a Histogram of Gate-to-Gate Velocity for flights TO Your Airport
    a. Histogram Instructions
        i. Y-Axis: # flights per time period investigated (e.g. month)
        ii. X-Axis: Gate-to-Gate Velocity in 50 know increments (i.e. 0, 50, 100, 150, …..500)
    b. What is mean
    c. What is the median
    d. What is Standard Deviation
    e. Is the distribution Normal
3) Generate a Histogram of Gate-to-Gate Velocity for flights FROM Your Airport
    a. Histogram Instructions
        i. Y-Axis: # flights per time period investigated (e.g. month)
        ii. X-Axis: Gate-to-Gate Velocity in 50 know increments (i.e. 0, 50, 100, 150, …..500)
    b. What is mean
    c. What is the median
    d. What is Standard Deviation
    e. Is the distribution Normal
4) Compare the Histogram for Gate-to-Gate Velocity for flights TO Your Airport with flights FROM Your Airport
    a. Write a Null Hypothesis
    b. Perform a t-Test (or a paired t-Test by OD or Stagelength or direction of flight (i.e. east-west or north-south). Is the Null Hypothesis accepted/rejected?
    c. (if there is a difference) what could explain the difference