Flow charting Problems

1. Input two integer numbers, A and B. If the first is greater than the second, print “Larger”, otherwise print “Not Larger”.
2. Input an ID number, rate of pay, hours worked, and the tax rate. Calculate gross pay, taxes owed, and the net pay. (Remember to pay time and a half for over-time pay.) Print out the ID, the gross pay, taxes owed, and the net pay.
3. You need an air conditioner. You need one between 5000 and 6000 BTU’s. You want to find one with the highest EER (Energy Efficiency Ratio) because it will be the most economical to operate.

EER = Number of BTUs

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Number of watts

You are considering three air conditioners:

MODEL BTU WATTS

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A 5000 820

B 6000 910

C 5500 850

Which one should you buy? Print out the EER values of all three units and a message indicating the most efficient unit to operate. Model A, B, or C.

1. Input an ID number, 3 test grades, and a final exam. Each test is worth 20%, and the final exam 40%. Calculate the final score. Print out the ID and final score.
2. Suppose there are more students in the class, referring to problem #4. I would like to process all the students in one execution run. Revise the flowchart such that many students could be processed. If the ID is equal to and END OF DATA TAG such as -999, there are no more students to process. -999 marks the end of the data list. Modify the flowchart for problem 4.
3. Do the same for problem 1 such that several sets of data can be processed.
4. Do the same for problem 2 such that several sets of data can be processed.
5. Each salesperson earns a base salary of $185.00. Moreover, if a salesperson’s total weekly sales exceeds $1,000, a commission of 5.3% is earned on any amount up to $5000 and 7.8% is earned on any amount in excess of $5000. Determine the weekly pay, for any salesperson whose total weekly sales amount is input. Print out the sales person’s ID, and his week sales and pay. Use an EOD tag to terminate the program.
6. Input two numbers X and Y. If the sum of X + Y is greater than 42, print out “42”. If not, increase X by 10 and Y by 3. Print out the new X and Y values and check to see if the sum is greater than 42. Continue until the sum is greater than 42, at which time you need to output 42.
7. Input a list of numbers one at a time. The last value, not part of this list is -999. This marks the end of the data list (EOD). Print out the largest and the smallest values of the list excluding the last value -999 which is not part of the list.
8. Input a list of numbers whose EOD is -1. Print out the largest and also a count of how many numbers are included in the list.
9. Several pairs (X, Y) of numbers are to be input. Any pair with the first value equal to the second value serves as the End of Data (EOD). Determine and print out counts of how many pairs satisfy X<Y and how many pairs satisfy X>Y.
10. Follow the following algorithm:
    1. Input a value for N.
    2. If N is less than or equal to zero, go to step (a).
    3. If N is greater than 100, output, “Value is too large” and go to step (g).
    4. If N is greater than 90 calculate the SUM = 50 + 51 + 52 + 53 + … + N and go to step (f).
    5. Calculate the SUM = 1 + 2 + 3 + 4 + . . . + n
    6. Output the value of SUM.
    7. Print out the message, “Goodbye” and stop your program