Homework Programming Logic and Design Chapter 5 Key

For each of the following questions, find the inputs and outputs, create the pseudocode, and desk check.

1. Write a program that will add up the sum of a series of numbers starting at 1 up to the number entered as in 1 + 2 + 3 + 4 + 5 = 15, where 5 was the number entered.

Inputs	Process	Outputs
number	count	total

       a. Enter the number

       b. Set count to 1, total to 0

       c. WHILE (count <= number)

            i. Set total = total + count

          ii. Set count to count + 1

       d. END WHILE

       e. Display total

Desk Check

number	count	total
4	1	1
	2	3
	3	6
	4	10

2. Write a program that will sum the positive integers entered by a user. The user will input integers until they want to stop. At that point they will enter q to quit.

Inputs	Process	Outputs
number		sum

    a. Set count to 1, sum to 0

    b. Enter a number

    c. WHILE (number != 'q')

        i. IF (number >= 0 or number > 0)

            1. sum = number + sum

        ii. END IF

        iii. Enter a number

    d. END WHILE

    e. Display sum

Desk Check

number	sum
4	4
-5	4
6	10
-4	10
5	15
6	21
q	21

3. Create an addition table that outputs the values below:

	1	2	3	4	5
1	2	3	4	5	6
2	3	4	5	6	7
3	4	5	6	7	8
4	5	6	7	8	9
5	6	7	8	9	10

Inputs	Process	Outputs
rowCount		sum
columnCount		

      f.   Set rowCount to 1

      g.   Set columnCount to 1

      h.   Display two spaces and then the numbers 1 – 5 spaced

      i.   WHILE (rowCount <= 5)

          i. Display rowCount

          ii. WHILE (columnCount <= 5)

              1.   Calculate sum by rowCount + columnCount

              2.   Display sum

              3.   Set columnCount = columnCount + 1

          iii. END WHILE

          iv. Set columnCount = 1

          v. Set rowCount = rowCount + 1

          vi. Newline

      j.   END WHILE

Desk Check

rowCount	columnCount	sum
1	1	2
1	2	3
1	3	4
1	4	5
2	1	3
2	2	4
…	…	…

5	4	9
5	5	10