Working with Algorithms

- Describe the purpose of a given algorithm and explain how it works
- Determine the correct output of an algorithm for a given set of data
- Identify and correct errors in algorithms
- Construct truth tables for a given logic statement (AND, OR NOT)
- Produce logic statements for a given problem

Dry Run
Checking the logic of an algorithm in a dry run is to use a trace table.

Setting up the trace table

- Start by setting up columns for each variable in the program and the last column is the output in your program

1. x = 8
2. y = 5
3. WHILE x > y
4. x = x + 1
5. y = y + x
6. print(x,y)

x	y	Output
8	5	
9	14	9,14

14 > 9 so we break from the while loop

Worked Example

The following program uses a condition-controlled loop.

```
1. x = 5
2. y = 0
3. while x > 0
4.    y = y + 1
5.    x = x – y
6. print(y)
```

x	y	output
5	0	
4	1	
2	2	
-1	3	3