

7 Flowcharts and tracing – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	Write it 3 times (English)
decision	_____
trace table	_____

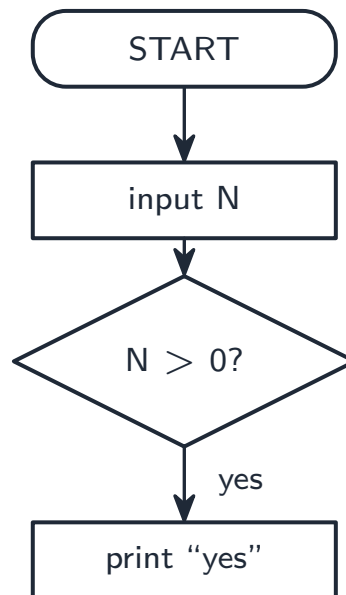
Recall

A flowchart and a trace table help you plan and check an algorithm.

New ideas

Read these first, then do the Practice.

■ 1 A flowchart



The arrows show the order the steps run in. A **decision** (diamond) has yes/no branches.

■ 2 A trace table

A **trace table** records the value of each variable as the program runs, so you can find errors:

count	total	output
1	5	
2	12	
3	20	20

Watch out: a flowchart's **arrows** show the *order* the steps run. A **trace table** records each variable's value step by step – work through it *one row at a time* to find where a bug appears.

Practice

Try these in order.

7.6 What do the arrows in a flowchart show? [1]

7.7 A decision box has how many branches? [1]

7.8 What is a *trace table* used for? [1]

7.9 In a trace table, what goes in each column? [1]

7.10 Why is it useful to trace through a program by hand? [1]

7.11 Challenge. A program sets `count = 0`, then repeats `count = count + 2` three times. Trace it and give the final value of `count`. [2]