

Trace the flow chart using the numbers 2 and 3. Write down each of the values of N in the order that they are printed out.

- (a) 2
(b) 3

[1]
[2]

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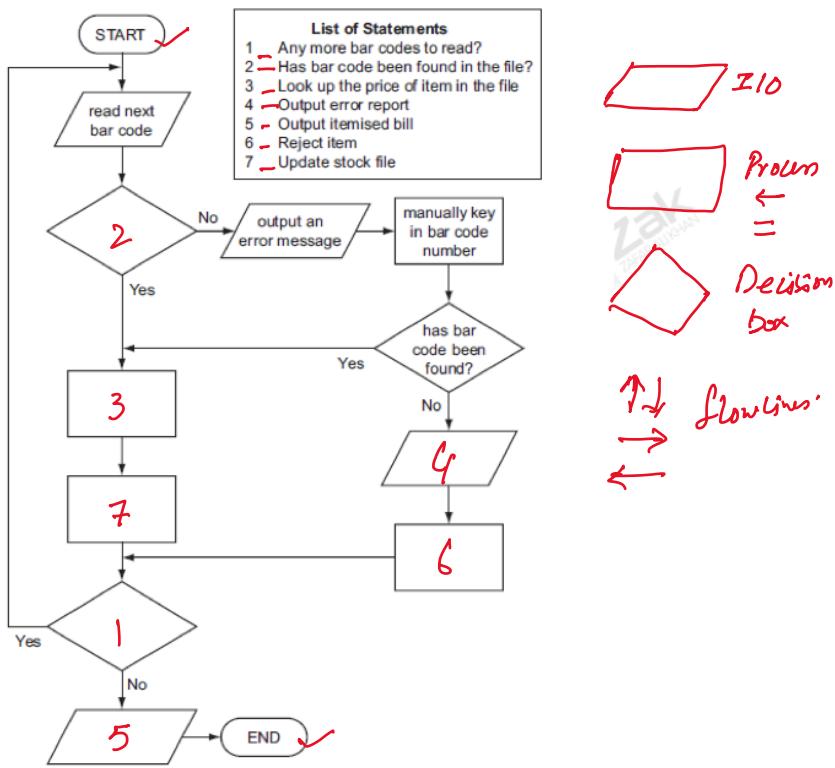


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Topic: 2.1 Algorithm design and problem-solving

Oct/Nov 2006

17 The following flowchart shows how the bar code written on an item is used to find the price, do stock control and produce an itemised bill. Select statements from the list below to complete the flowchart.



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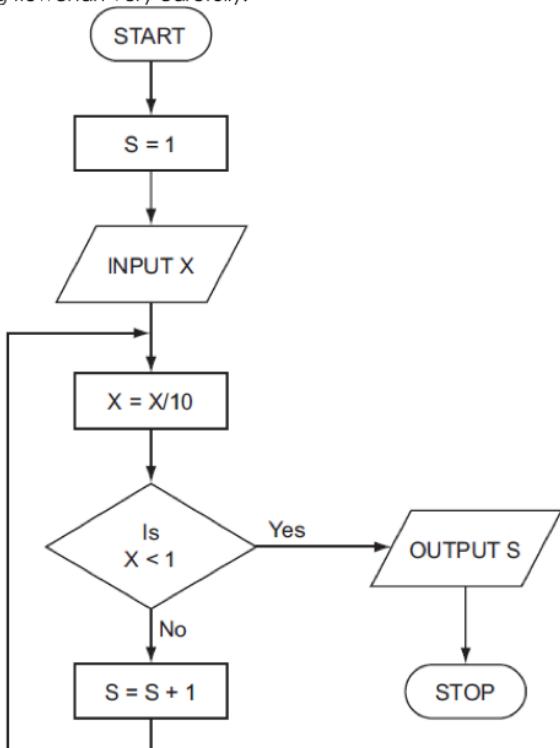


Topic: 2.1 Algorithm design and problem-solving

May/June 2007

2 Describe, with examples, two types of test data which could be used to test a system. [4]

11 Study the following flowchart very carefully.



(a) Complete the following table showing the expected output from the flowchart for the three sets of input data:

INPUT X	OUTPUT S
48	
9170	
- 800	

[3]

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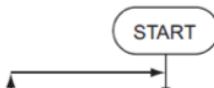
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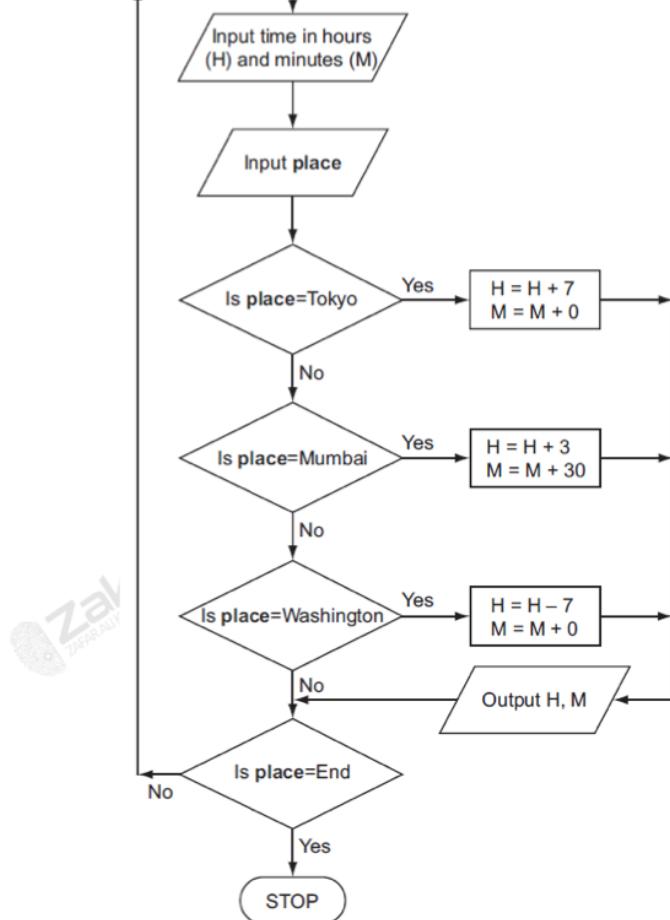


Topic: 2.1 Algorithm design and problem-solving

Oct/Nov 2007

11 Majid lives in Cairo but often travels to Tokyo, Mumbai and Washington. A flow chart has been written so he can work out the local time in these three places.





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Topic: 2.1 Algorithm design and problem-solving

(a) What output would be produced from the following input?

Input			Output	
place	hours (H)	minutes (M)	H	M
Tokyo	11	15		
Mumbai	15	10		

[2]

(b) What problem would occur if place = Mumbai and H = 15 and M = 30?

.....
.....
.....

[1]

(c) What problem would occur if place = Washington and H = 4 and M = 0?

.....
.....
.....

[1]

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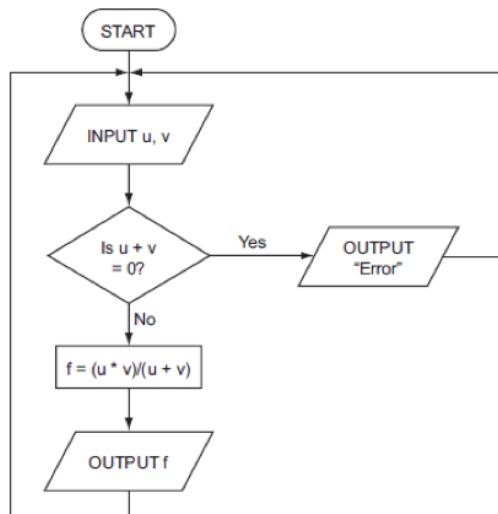


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Topic: 2.1 Algorithm design and problem-solving

May/June 2008

9 The following flowchart inputs two numbers, carries out a calculation and then outputs the result.



(a) Complete the following table for the three sets of input data.

INPUT		OUTPUT
u	v	
5	5	
6	-6	
12	4	

[3]

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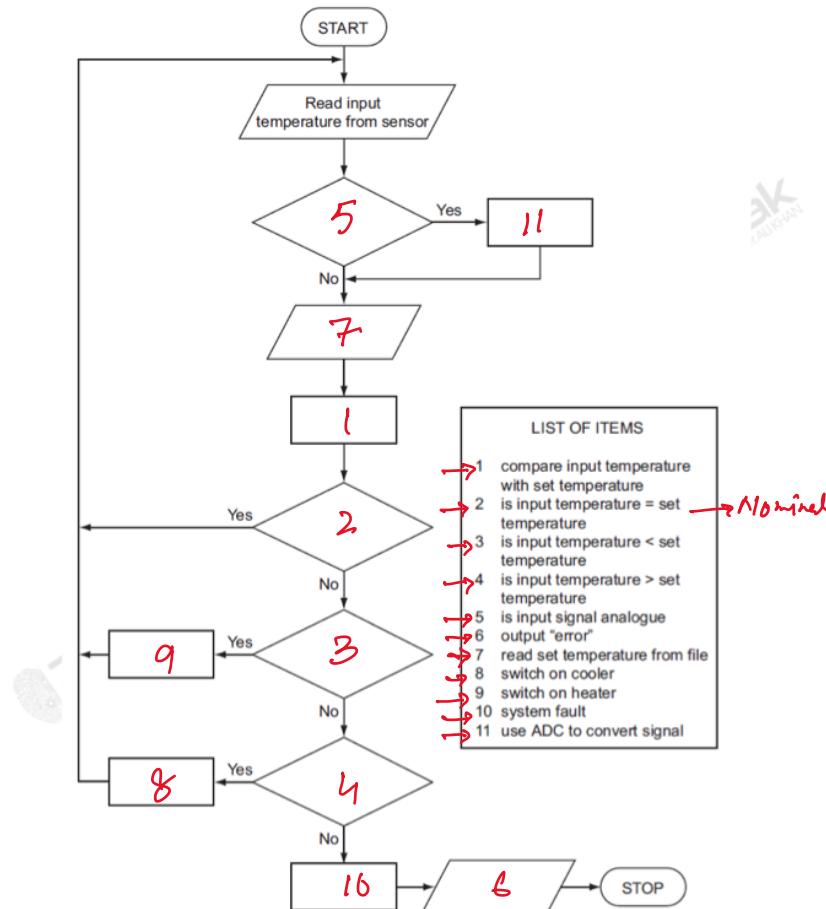


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Topic: 2.1 Algorithm design and problem-solving

Oct/Nov 2008

17 The following flowchart shows how sensors (which can be analogue or digital) and a computer are used to control the temperature of a greenhouse for plants. Complete the flowchart using the items from the list below.

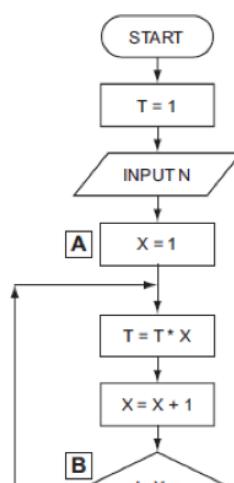


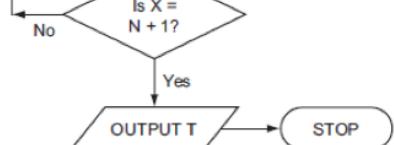
[6]

Topic: 2.1 Algorithm design and problem-solving

May/June 2009

14 Study the flowchart very carefully.





(a) Complete the table to show what outputs you would expect for the two inputs.

Input N	Output T
5	
1	

[2]

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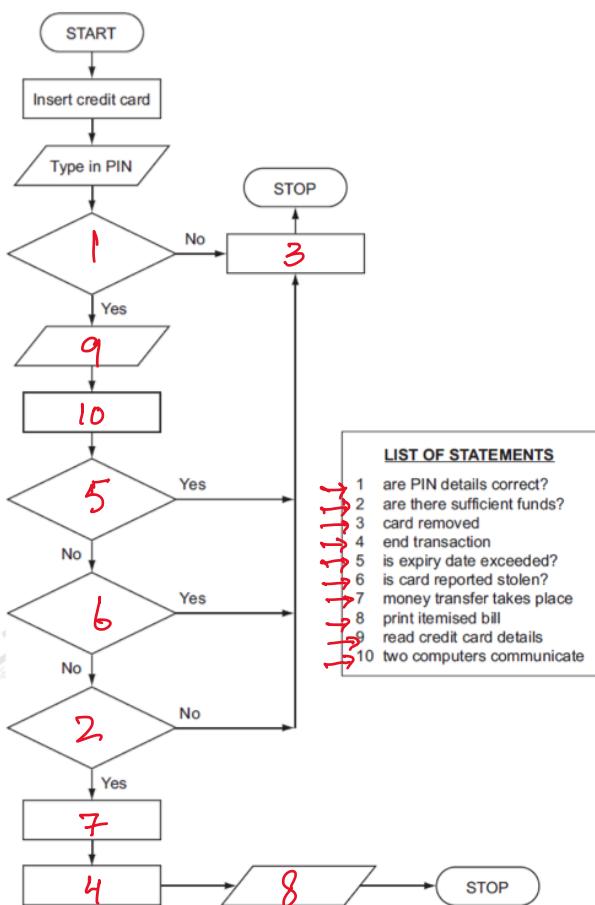
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Topic: 2.1 Algorithm design and problem-solving

16 The following flowchart shows what happens when a customer uses a credit card to pay for goods at a supermarket. Ten of the boxes are blank.

Using the items from the list, insert the ten missing statements using the appropriate number only. Each statement may be used once only.



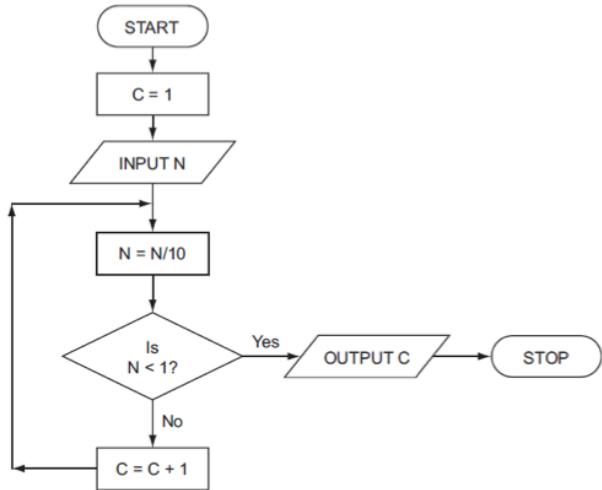
[5]

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**Topic: 2.1 Algorithm design and problem-solving****Oct/Nov 2009. P11**

9 Study the flowchart.



Complete the table to show what outputs you would expect for the three inputs.

INPUT N	OUTPUT C
55	
2100	
1	

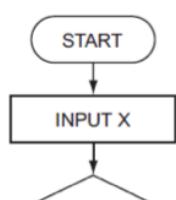
[3]

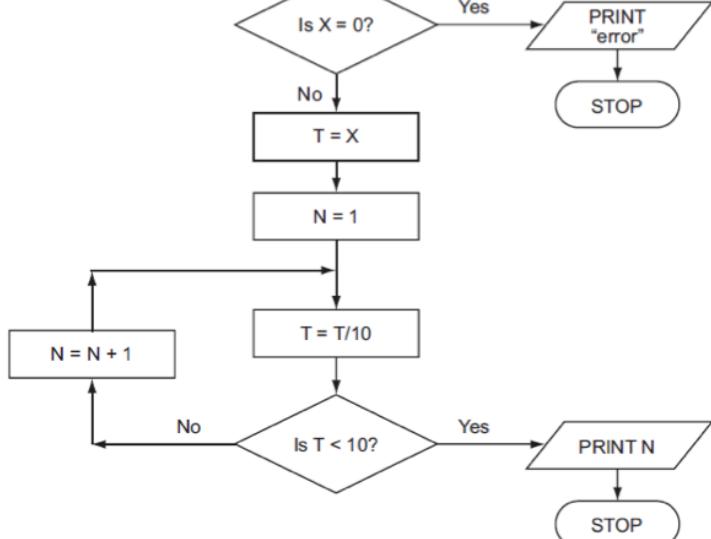
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**Topic: 2.1 Algorithm design and problem-solving****May/June 2010. P12**

13 Study the following flowchart very carefully:





What output would you expect if the following data was input into the flowchart?

X	OUTPUT
-150	
540	
0	

[3]

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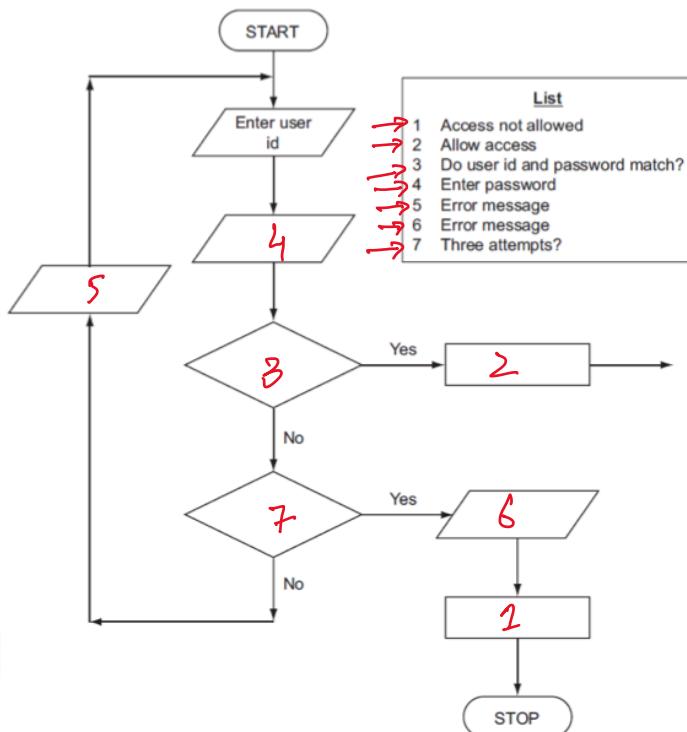


Topic: 2.1 Algorithm design and problem-solving

Oct/Nov 2010. P11

- 4 (a) To log on to a computer, a user needs to type in a user id followed by a password; these should match up. Only three attempts are allowed.

The flowchart below shows the log on procedure. Several boxes have been left blank. Complete the flowchart using items from the list.



[3]

(b) Sometimes it is necessary to key in the password twice.

Name this type of data check.

[1]

2/4/21

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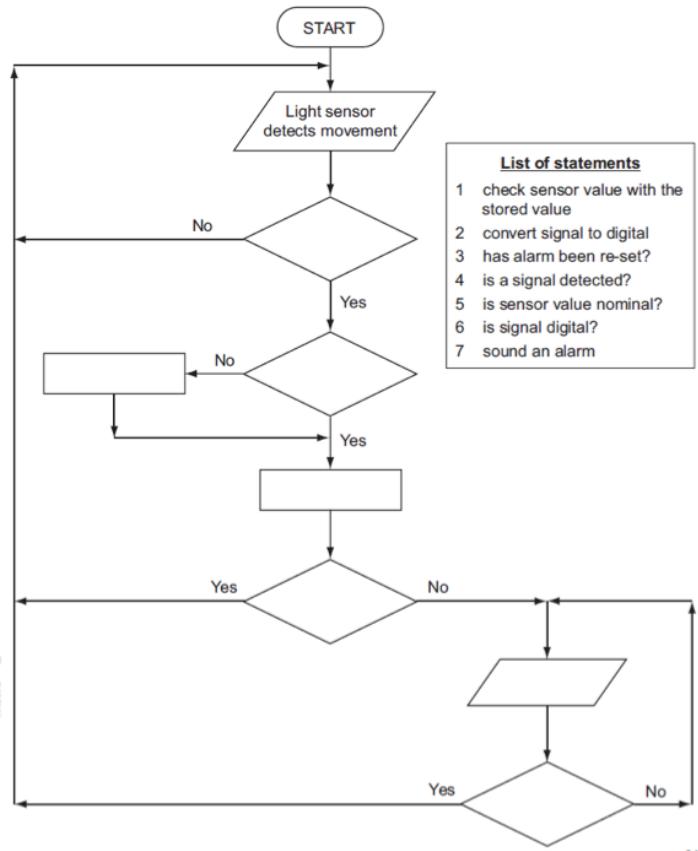
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Topic: 2.1 Algorithm design and problem-solving

Oct/Nov 2010. P13

15 (a) The following flowchart shows how a burglar alarm system uses light sensors to determine if an intruder has entered the house and decides to sound an alarm.

Select statements from the list below, using numbers only, to complete the flowchart.



[4]

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