

# AQA Computer Science A Level

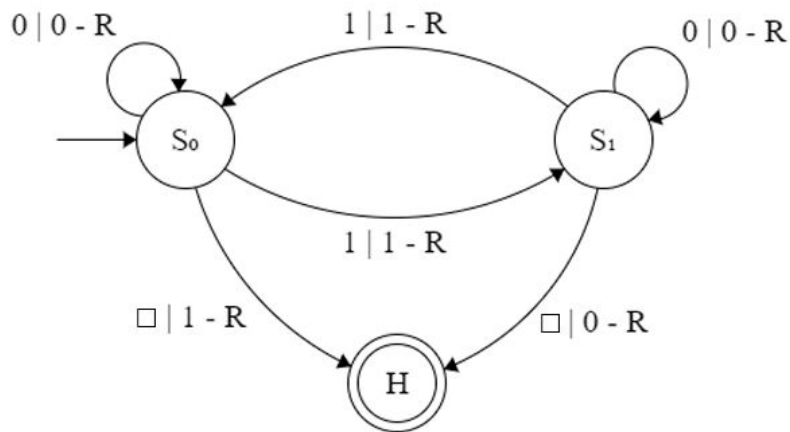
## 4.4.5 A model of computation

### Flashcards

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# Which transition function **does not** exist in the state transition diagram below?



**A:**  $\delta (S_0, 0) = (S_0, 0, R)$

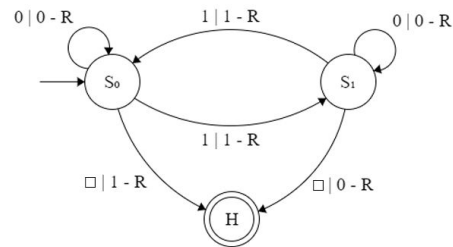
**B:**  $\delta (S_1, 1) = (S_1, 1, R)$

**C:**  $\delta (S_1, \square) = (H, \theta, R)$

**D:**  $\delta (S_0, 1) = (S_1, 1, R)$



Which transition function does not exist in the state transition diagram?



B:  $\delta (S_1, 1) = (S_1, 1, R)$



Name the three primary components  
of a Turing machine



Name the three primary components of a Turing machine

1. Read/write head
2. Finite state machine
3. Infinite tape



Which symbol represents  
an empty cell?



# Which symbol represents an empty cell?



What part of a Turing machine is represented by a triangle?





What part of a Turing machine is represented by a triangle?

Read/write head



Which are more powerful models of computation: Turing machines or finite state machines?



Which are more powerful models of computation:  
Turing machines or finite state machines?

Turing machines



What name is given Turing machines that are capable of representing any finite state machine?



What name is given Turing machines that are capable of representing any finite state machine?

Universal Turing machine



Which Greek letter is used in transition functions?



Which Greek letter is used in transition functions?

Delta ( $\delta$ )



What is the importance of Turing machines on the subject of computation?





What is the importance of Turing machines on the subject of computation?

Turing machines prove that there are problems which cannot be solved by computers.



What name is given to the set of symbols  
that a Turing machine  
can recognise?



What name is given to the set of symbols that a Turing machine can recognise?

Alphabet



Why are universal Turing machines said to act as interpreters?



Why are universal Turing machines said to act as interpreters?

Because they read their instructions in sequence before executing operations on their input data.

