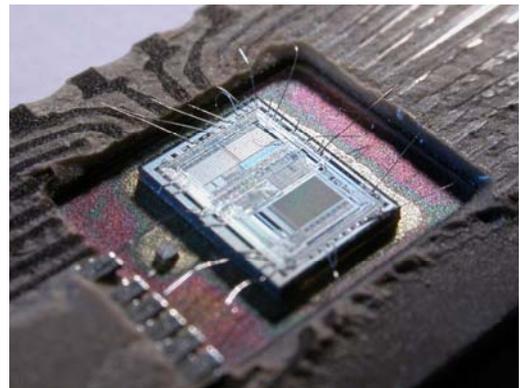


# Fondements

*information*

*machines*



*Source : wikipedia.org, distribué sous licence libre*

## 1.1 La logique, un formalisme de la pensée

*valides complètes*

### 1.1.1 Notions de logique aristotélicienne

*Organon*

---

*mortels*

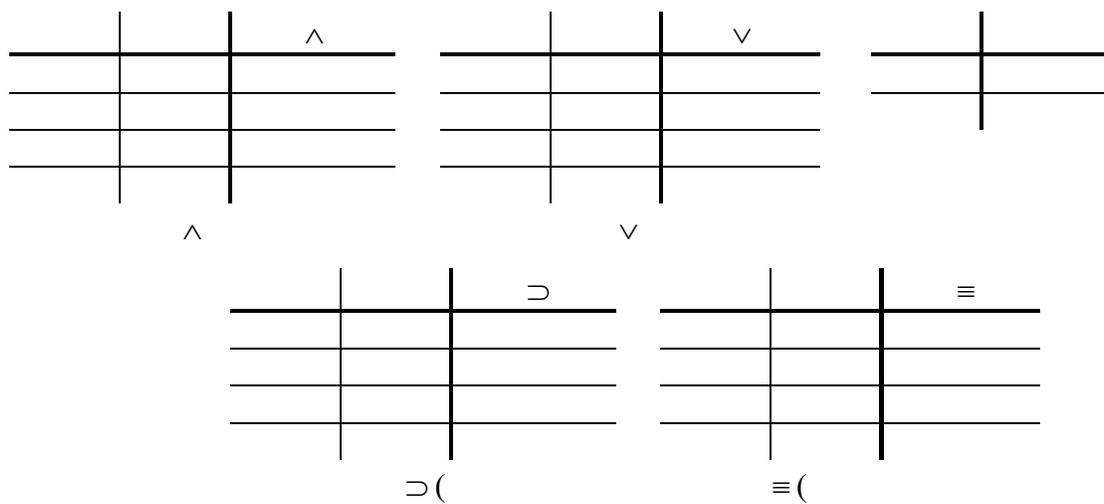
*Je suis un homme  
Je suis mortel*

*Tous les hommes sont  
homme*



1.1.3 Raisonnement, déduction et inférence

$\wedge \vee \supset \equiv$



n'équivaut pas à :

*Tu fais tes devoirs      Tu iras au cinéma*

$\supset \equiv \supset$

### 1.1.4 L'avènement de l'algèbre de Boole

*Mathematical Analysis of Logic*      2) *An Investigation  
Into the Laws of Thought, on Which are Founded the Mathematical Theories of Logic and Probabilities*

## 1.2 La logique mathématique



*logique mathématique*

### 1.2.1 Théorie des ensembles

.

$i$

$i+$

$i$

$i$

$f x \quad x$

### 1.2.2 Paradoxe de Russell

1.2.3 Programme de Hilbert

*Ignorabimus*

*Königsberg*



*indécidables*

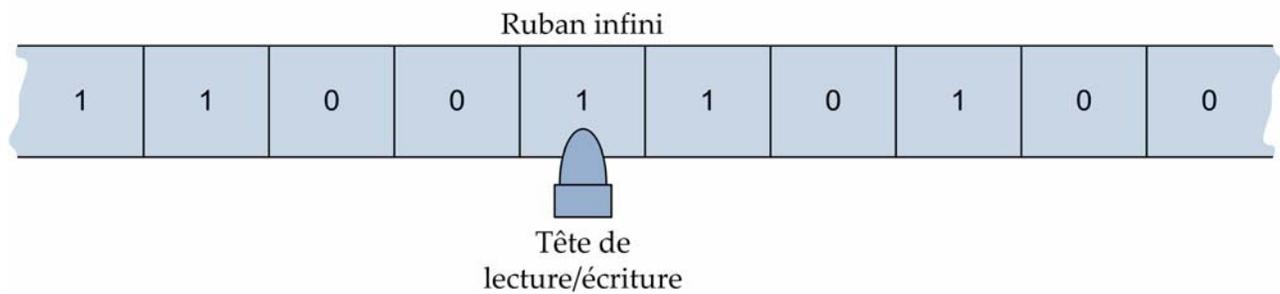
*incomplétude*

## 1.3 La naissance de l'âge numérique

### 1.3.1 La machine de Turing

*nombre de Gödel*

*calculabilité*



*contrôler*

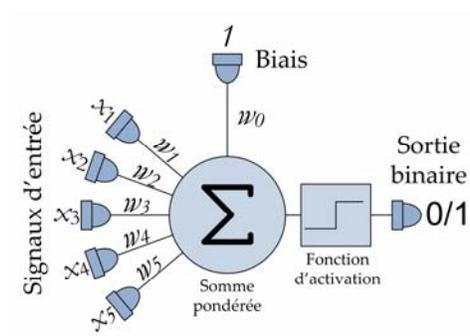
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### 1.3.2 La cybernétique

*ce qui dirige*

*mécanismes*

### 1.3.3 Le neurone artificiel



$i$

$w$

*apprendre*

*perceptron*

### 1.3.4 La machine de von Neumann

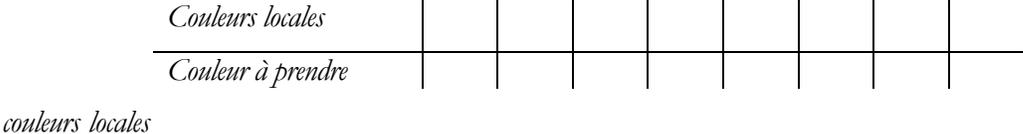
*Institute of Advanced studies*



*Conus Textile*

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*How to Solve It*





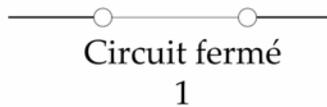
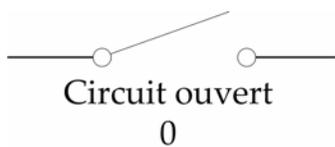
*Computer*

*Electronique Discrete Variable Automatic*

## 1.4 La technologie au service de la science

*Massachusetts Institute of Technology*

### 1.4.1 Circuits à relais



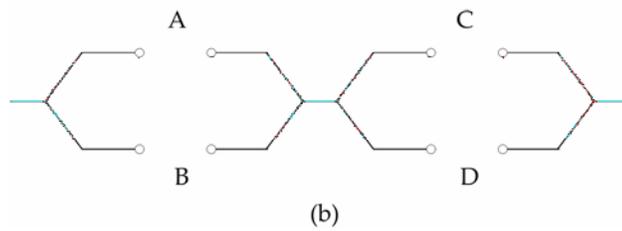
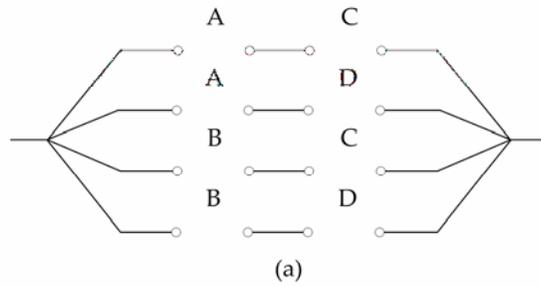
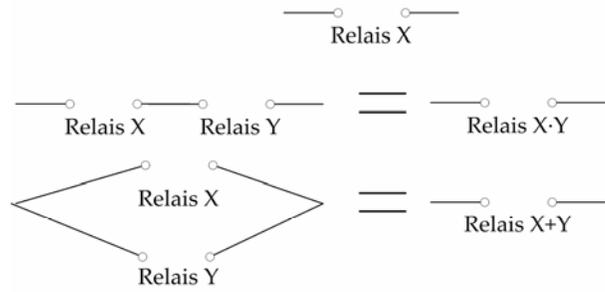
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*First Draft of a Report on the EDVAC*

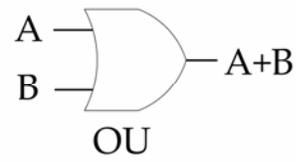
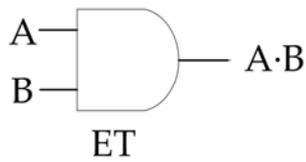
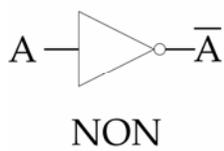
*Advanced Studies  
A Symbolic Analysis of Relay and Switching Circuits*

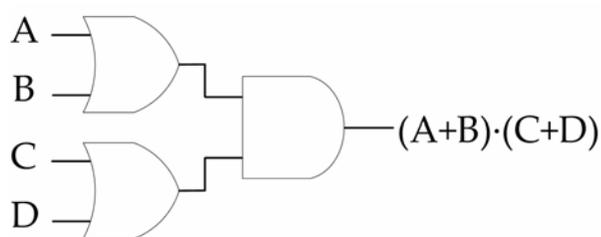
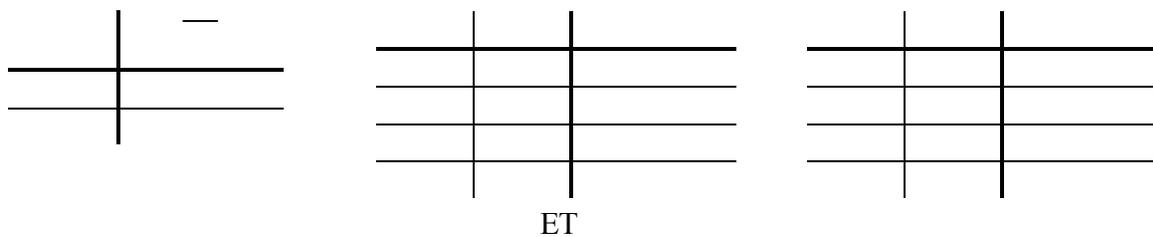
*Institut of*

*Master of Science*

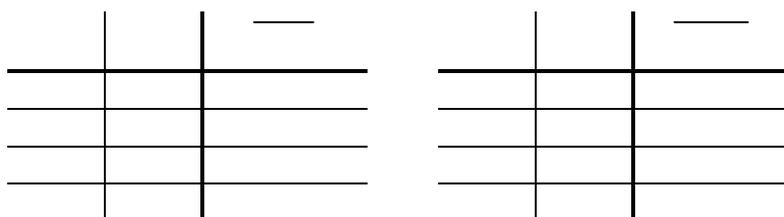
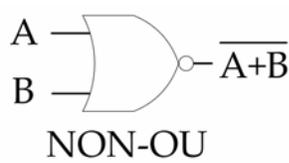
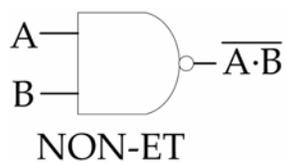


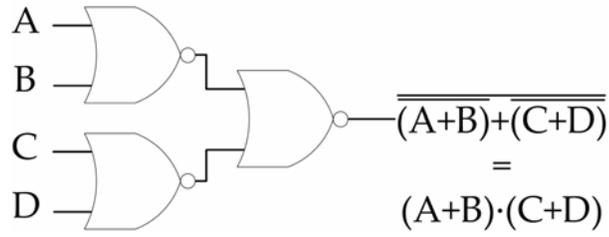
### 1.4.2 Portes logiques





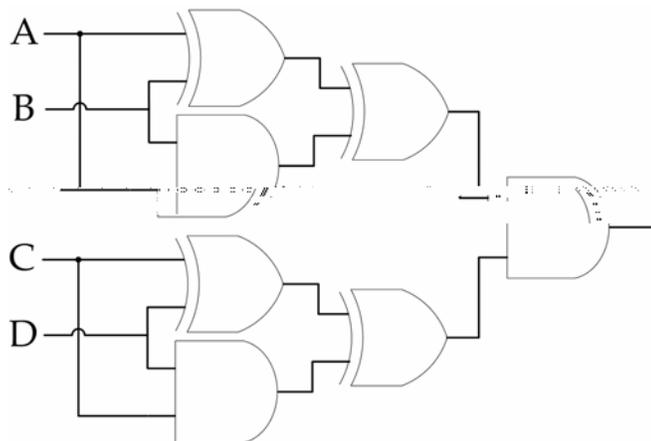
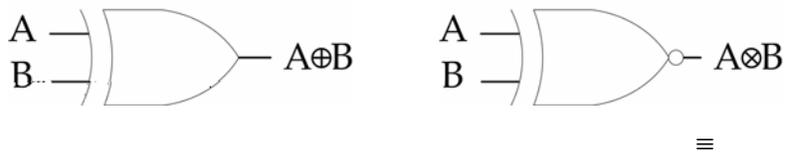
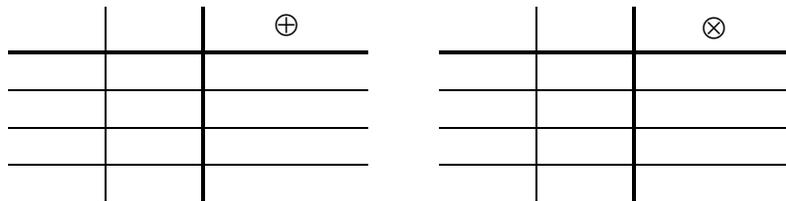
*inversant*





$\overline{\text{donut}} \quad \text{muffin}$

$\overline{\text{donut}} \quad \overline{\text{muffin}}$

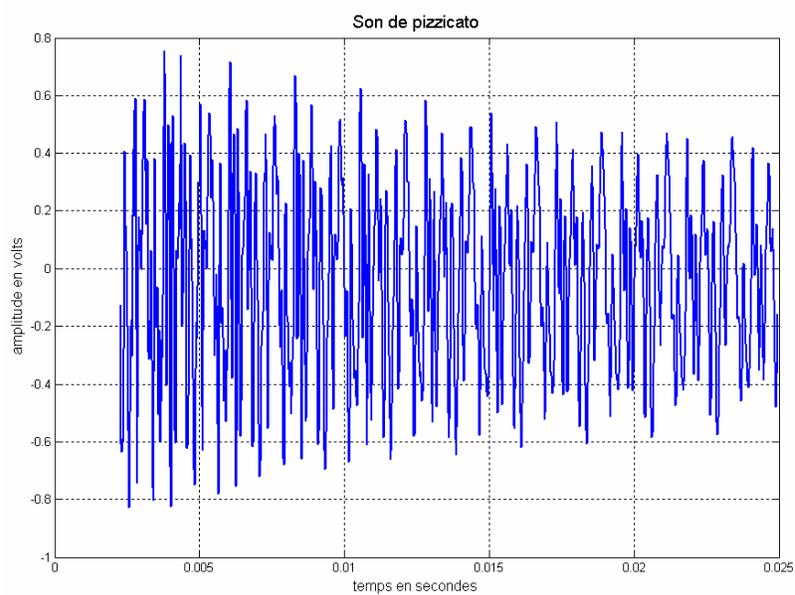




### 1.4.4 Discrétisation

*discrétisation*

*fréquence d'échantillonnage*



1 - FONDLEMENTS

