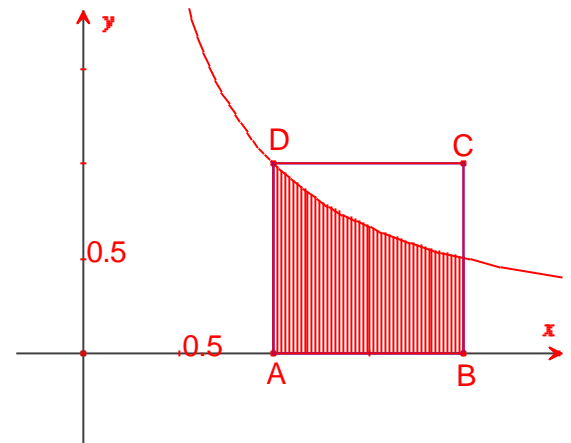


Càlcul aproximat de ln 2

Per calcular el valor ln 2 podem utilitzar el Mètode de

Montecarlo a la funció $f(x) = \frac{1}{x}$, $x \in [1, 2]$.

Escollir un punt $P(x_0, y_0)$ a l'atzar en el quadrat ABCD,
A(1, 0), B(2, 0), C(2, 1), D(1, 1).



Solució:

Notem que l'àrea del quadrat ABCD és 1.

Calcular la probabilitat que $\frac{1}{x_0} \geq y_0$.

MENÚ PR

1	2	3	4
5	6	7	8
9	A	B	C

MONTECA

MON	A	B	C	D
1				
2				
3				
4				
5				

FILE EDIT DELETE INSERT CLEAR

SHEET

Llenar

Formula :=Ran# +1

Cell Range:A1:A100

EXE

SHEET

Llenar

Formula :=Ran#

Cell Range:B1:B100

EXE

SHEET

Llenar

Formula :=1÷A1

Cell Range:C1:C100

EXE

Omplim la fórmula:

= Intg(C1 - B1) + 1

rang : D1 : D100

Rad Norm1 d/c Real SHEET

Llenar
 Formula :=Intg (C1-
 Cell Range:D1:D100

EXE

Rad Norm1 d/c Real SHEET

SHE	A	B	C	D
1	1.3013	0.1765	0.7684	1
2	1.5892	0.0155	0.6292	1
3	1.8906	0.4439	0.5289	1
4	1.96	0.1111	0.5101	1
5	1.2501	0.8018	0.7998	0

=Intg (C1-B1)+1

FILL SORTASC SORTDES

Ens situem a la cel·la D101.

Rad Norm1 d/c Real SHEET

SHE	A	B	C	D
99	1.2122	0.5553	0.8249	1
100	1.1566	0.5212	0.8645	1
101				62
102				
103				

=CellSum (D1:D100)

FILL SORTASC SORTDES

Rad Norm1 d/c Real SHEET

SHE	A	B	C	D
99	1.5405	0.5259	0.6491	1
100	1.2138	0.615	0.8238	1
101				69
102				
103				

=CellSum (D1:D100)

NEW OPEN SAVE-AS RECALCS CSV

Rad Norm1 d/c Real SHEET

SHE	A	B	C	D
99	1.2378	0.393	0.8078	1
100	1.2325	0.591	0.8113	1
101				67
102				
103				

=CellSum (D1:D100)

NEW OPEN SAVE-AS RECALCS CSV

Rad Norm1 d/c Real SHEET

SHE	A	B	C	D
99	1.6821	0.6718	0.5944	0
100	1.5376	0.9391	0.6503	0
101				64
102				
103				

=CellSum (D1:D100)

NEW OPEN SAVE-AS RECALCS CSV

Rad Norm1 d/c Real SHEET

SHE	A	B	C	D
99	1.8212	0.5183	0.549	1
100	1.2263	0.3997	0.8154	1
101				74
102				
103				

=CellSum (D1:D100)

NEW OPEN SAVE-AS RECALCS CSV

Rad Norm1 d/c Real SHEET

SHE	A	B	C	D
99	1.1008	0.4688	0.9083	1
100	1.6739	0.7876	0.5973	0
101				70
102				
103				

=CellSum (D1:D100)

NEW OPEN SAVE-AS RECALCS CSV

SHE	A	B	C	D
99	1.818	0.2452	0.55	1
100	1.1731	0.6306	0.8523	1
101				67
102				
103				

=CellSum(D1:D100)

NEW OPEN SAVE-AS RECALCS CSV

SHE	A	B	C	D
99	1.2082	0.8336	0.8276	0
100	1.3754	0.8472	0.727	0
101				62
102				
103				

=CellSum(D1:D100)

NEW OPEN SAVE-AS RECALCS CSV

SHE	A	B	C	D
99	1.2227	0.8748	0.8178	0
100	1.2503	0.0151	0.7997	1
101				80
102				
103				

=CellSum(D1:D100)

NEW OPEN SAVE-AS RECALCS CSV

MON	A	B	C	D
99	1.1953	0.8859	0.8365	0
100	1.6443	0.1512	0.6081	1
101				65
102				
103				

=CellSum(D1:D100)

CUT COPY CELL JUMP SEQ >

Fent el recompte dels 1000resultats:

$$\frac{62 + 69 + 67 + 64 + 74 + 70 + 67 + 62 + 80 + 65}{1000}$$

Math	Rad	Norm1	d/c	Real
62+69+67+64+74+70+67				
1000				
0.68				

JUMP DELETE MAT/VCT MATH

$\ln 2 \approx 0.68$.

Math	Rad	Norm1	d/c	Real
$\ln 2$				
0.68				
0.6931471806				
$\int_1^2 \frac{1}{x} dx$				
0.6931471806				

$\int dx$ Σ >