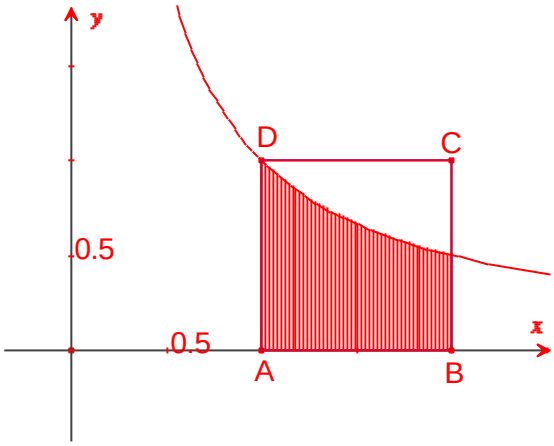
Càlcul aproximat de ln 2



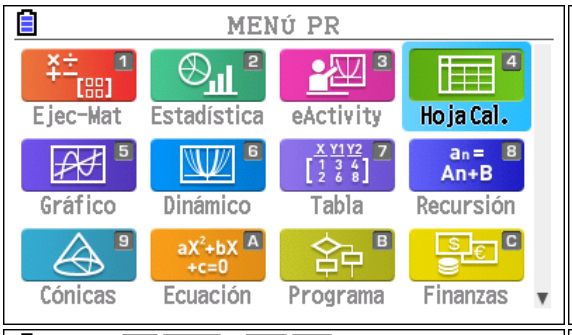
Per calcular el valor ln 2 podem utilitzar el Mètode de Montecarlo a la funció $f(x) = \frac{1}{x}$, $x \in [1, 2]$.

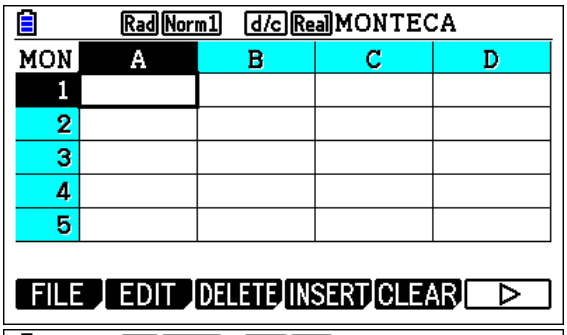
Escollir un punt $P(x_o, y_o)$ a l'atzar en el quadrat ABCD, $A(1, 0)$, $B(2, 0)$, $C(2, 1)$, $D(1, 1)$.

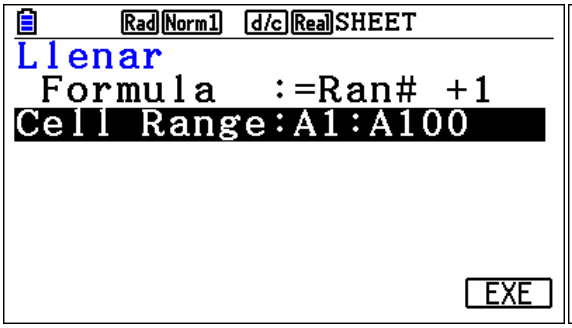
Solució:

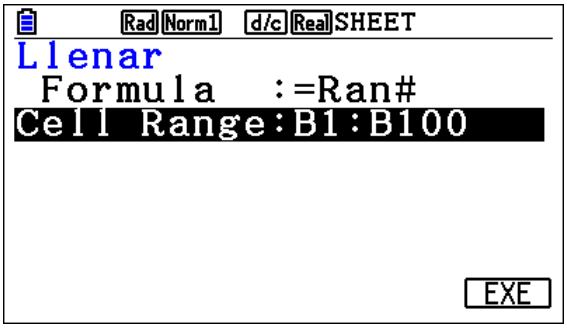
Notem que l'àrea del quadrat ABCD és 1.

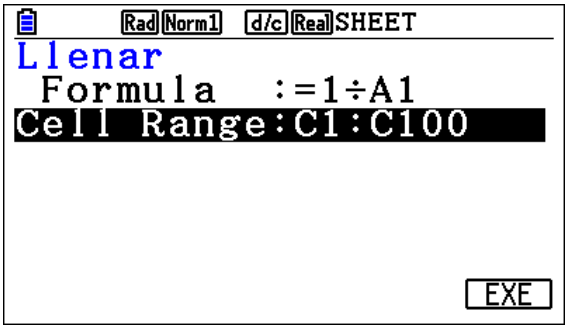
Calcular la probabilitat que $\frac{1}{x_o} \geq y_o$.







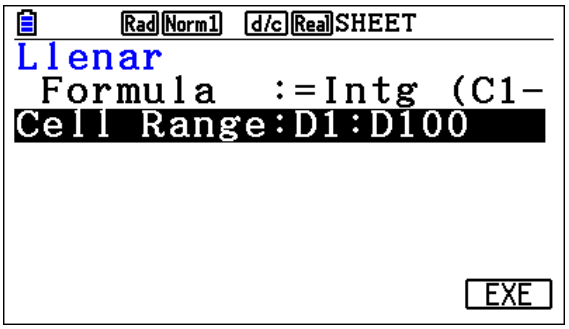


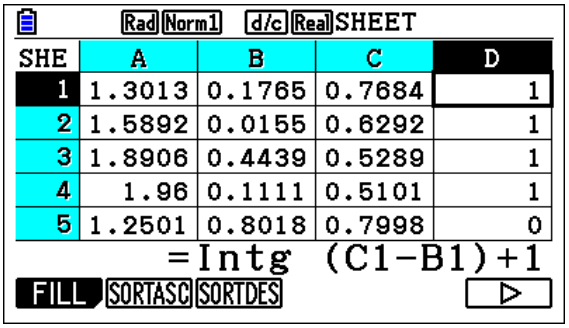


Omplim la fórmula:

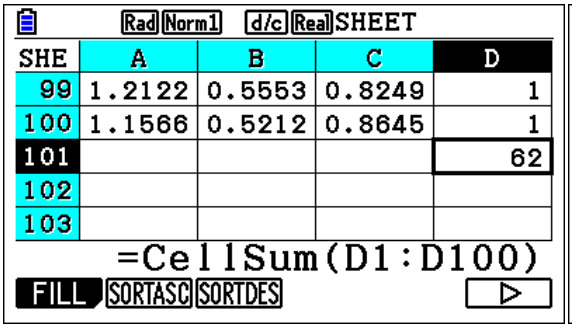
$= \text{Intg}(C1 - B1) + 1$

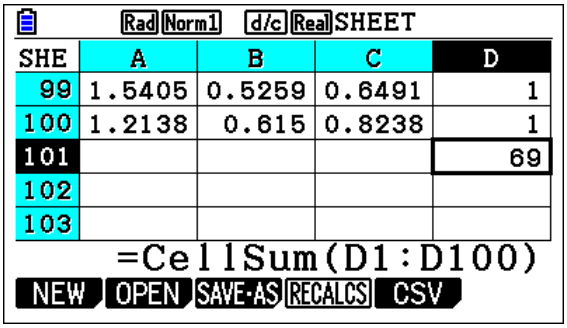
rang : D1 : D100

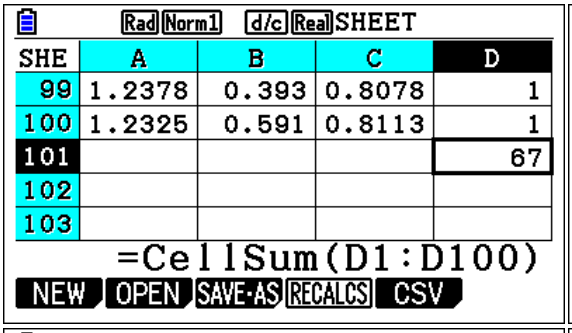


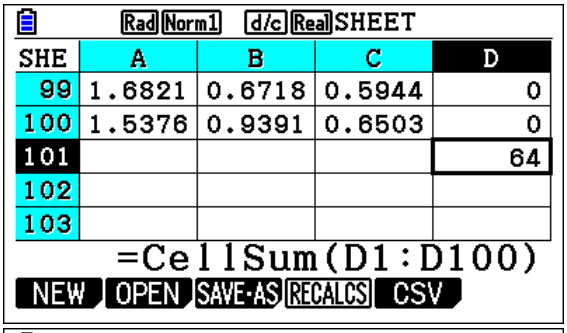


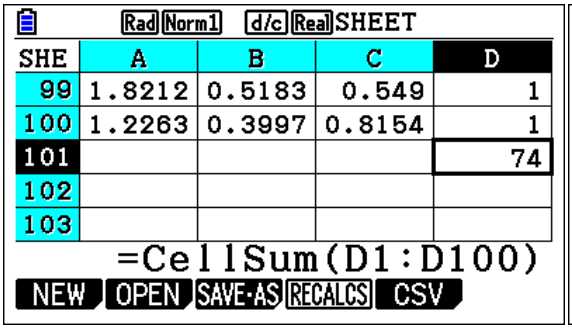
Ens situem a la cel·la D101.

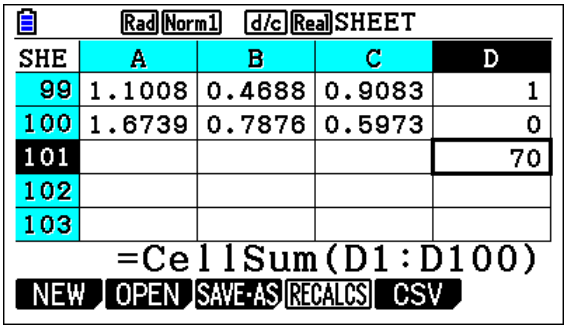


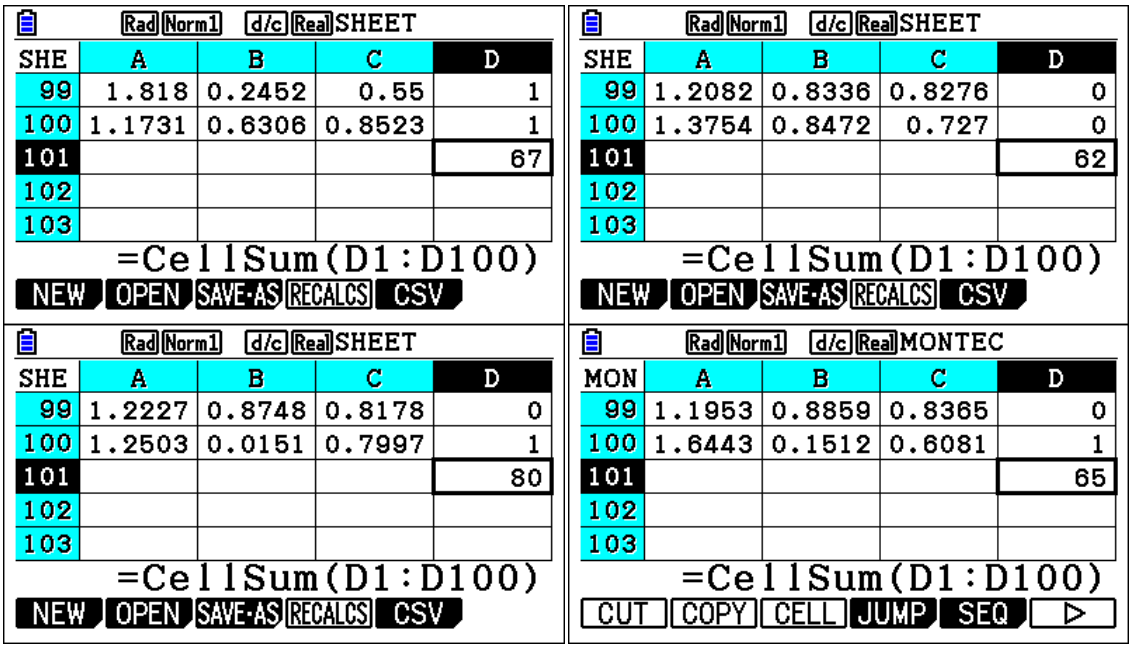






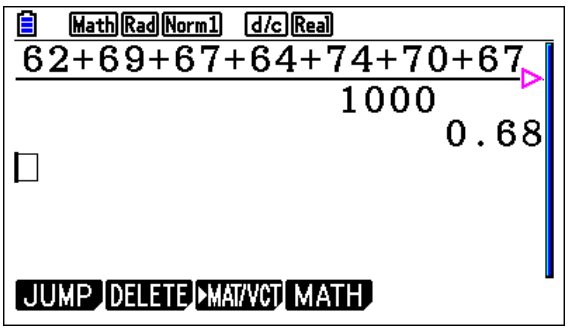






Fent el recompte dels 1000resultats:

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



$\ln 2 \approx 0.68$.