12. Pseudocode:

Step 1: Def GBM (n, x_0, r, σ):

$W_0 \leftarrow 0$, $h \leftarrow \frac{T}{N}$, $Z \leftarrow N(0,1)$

$\hat{W}_{i+1} = \hat{W}_i + \sqrt{h} \cdot Z$

$\hat{X}_{i+1} = x_0 \cdot e^{(r - \frac{1}{2}\sigma^2)t_i + \sigma \hat{W}_{i+1}}$

return $(\hat{X}_0, \hat{X}_1, \cdots, \hat{X}_N)$

Step 2: Draw the graph of GBM with $(\hat{X}_0, \hat{X}_1, \cdots, \hat{X}_N)$