$\log S_t = \mu + \varepsilon_t \quad \Rightarrow \quad S_t = e^{\mu} \times e^{\varepsilon_t}$

$\Rightarrow S_t / S_0 = e^{\varepsilon_t - \varepsilon_0}$

Then $\log S_t - \log S_{t-1} = \varepsilon_t - \varepsilon_{t-1}$

So μ **cancels!**

(assuming μ is constant).

$$\| $$

$$\log\left(\frac{S_t}{S_{t-1}}\right)$$

So $\sum$ ~~log(St)~~ diffs $= \varepsilon_T - \varepsilon_0$

$$\| $$

$$\log(S_T) - \log(S_0) = \varepsilon_T - \varepsilon_0$$

$\Rightarrow$ ~~St~~ $S_T = S_0 \, e^{\boxed{\varepsilon_T - \varepsilon_0 = \sum \varepsilon_t - \varepsilon_{t-1}.}}$