hw_exact_sample

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We consider an arithmetic asian call price for the following parameters:

```
In [1]: '''=================
        paras are given here
        ================='''

        import numpy as np

        S0 = 100.0
        sigma = 0.20
        r=0.0475


        K = 110.0
        T = 1.
        otype = 1 #call for 1, put for -1
        num_step = 5
```

```
In [2]: from sde_1d_v01 import *
```

- Add BSM arithmetic asian price engine to Gbm_1d class followed by the following pseudocode.

  Pseudocode bsm_arithmetic_asian_exact_sample(otype, strike, maturity, num_step, num_path):

  - generate (num_path) many GBM paths by exact sampling;
  - compute discounted payoff for each path;
  - Take the average for the option price.

- compute arithmetic asian option price given by above price engine
- With the same paras, compute corresponding geometric asian option and european option price
- Compare all those three prices. Could you have some kind of inequality of three quantities?