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Solution:

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1. A stock whose price is $30 has an expected return of 9% and a volatility of 20%. In Excel, simulate the stock price path over 5 years using monthly time steps and random samples from a normal distribution. Chart the simulated stock price path. By hitting F9, observe how the path changes as the random samples change.

图形用户界面, 文本

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手机屏幕截图

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1. Derive the distribution of the continuous compounded rate of return. (Hint: ST=S0\*erT)

Solution:

*r* = (ln(ST) – ln(S0))

Since the stock price ST has the log-normal distribution, and hence

ln(ST) ~ N(lnS0+, σ2T),

the continuous compounded rate of return *r* ~ N(, ).

5.(Extra)

图形用户界面, 应用程序

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Hint: the price of the zero-coupon bond B with the continuous compounding annual interest rate of $1 is: B = interest/ =1\*e-x(T-t)=e-x(T-t)

Solution:

图片包含 示意图

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