

The in-class final (about 150/200 points)

- Stochastic models
 - Generally, how do we set up a Monte Carlo simulation using either a Weiner or Ito Process – what is the role played by the two primary terms?
 - How and why would we add a Poisson distribution to our Ito process?
 - Why is it that even though $E(S_t) = S_0 e^{\mu T}$ that we cannot say the the expected future growth rate is μ (what is it)?
 - **Memorize:** Unbiased Ito Monte Carlo Simulation equation *and* be able to explain how it would work in a simulation (what is it doing?).
 - You **are not** required to derive an Ito or Lemma process or show the application of Ito's Lemma.

cont

- The Greeks
 - You **do** need to know the definitions of the Greeks but you do **not** need to know how they are derived.
 - What are the practical limits of using Greeks like the delta for portfolio adjustments (why do I advise using sensitivity analysis)?
- Black Scholes
 - You do not need to memorize the Black Scholes formula **but**
 - ... you may need to explain more or less how it works – what it is doing.
 - Is there an alpha term in Black Scholes? Why or why not?
- Implied Volatility
 - What exactly is implied volatility? What does that term mean?
 - If implied volatility for a call option is much higher than what you know is a good estimate for historical volatility, what does it mean about an option's price and why?