* Risk Classes
  + Market Risks
    - Interest Rate Risk
    - FX (Foreign Exchange)
    - Volatility Risk
      * Derivatives have volatility
    - Prepayment
  + Credit Risks
    - Default
  + Operational Risks
    - 9/11 (wow that’s extreme)
  + Liquidity Risks
* Asset Classes
* Products
  + Cash
  + Futures
  + Swaps
  + Derivatives
    - Volatility Risk
* THINGS TO KNOW (oh god)
  + Calculate the KURTOSIS of a Gaussian distribution

MIDTERM

* Closed everything, just a pencil
* If you made a ten-year loan, 3 month libor plus 242, your manager wants you to hedge that risk. 242 means 2.42%
  + From the bloomberg screen what do you do
  + If you made a 10 year loan you are receiving the 3 month LIBOR.
  + Risk is: 3 month libor decreasing
  + In the cap floor world you’d buy a floor, 10 year. Price of 10 year floor is towards bottom right (34.576, which is an implied volatility)
  + Do a Black calculation on that implied vol
  + Say we don’t want to hedge the first three years, buy a 3 into 7 receiver. Start at 3, go to the 7 column. (this is all in Swaptions)
  + Fuck oh god
  + Same thing, no derivatives
    - Use Futures or a Swap
    - 10 year swap, receiving fixed
    - According to the screen (2.39), receiver swap, receive 2.39%, pay float.
    - What is the interest rate?
      * 239 + 242 (the 3 mo LIBOR risk is gone bc of the Swap) -> 481 bps, or 4.81%
* Calculating a Yield Curve by hand (oh god oh no oh fuck)
  + LIBOR, Eurodollar futures, and swaps
  + First discount factor (1m): df(1M) =ugh = 1 / (1 + fraction of year \* Bloomberg rate/100) = 1 / (1 + (1/12)\*(.12/100)) = 0.9999
  + Second = 0.9998
  + Third = 0.9997
  + FUTURES:
    - Df(3, 6) = 1 / (1 + (1/4) \* (100 – Bloomberg rate all / 100)) = 1 / (1 + .25 \* (.4/100)) = .9990
    - Df(3, 6). We need Df(0, 6) = Df(0, 3) \* df(3, 6) = 0.9997 \* .9990 = .9987
  + SWAPS:
    - 2 year swap, we need 6 month discount factor
    - [get formula from excel sheet hw1]
* What else oh boy
* Calculating the Moments of a Mixed Gaussian Dist
  + That’s a lot of math oh god
  + Try to go over the call put shit in chapter 1
  + Uhhhhhhhhhhgh
* Black Schouls Derivation
  + Appendix of Chapter 4
  + May or may not be on it
  + Pray to a curve, fuck