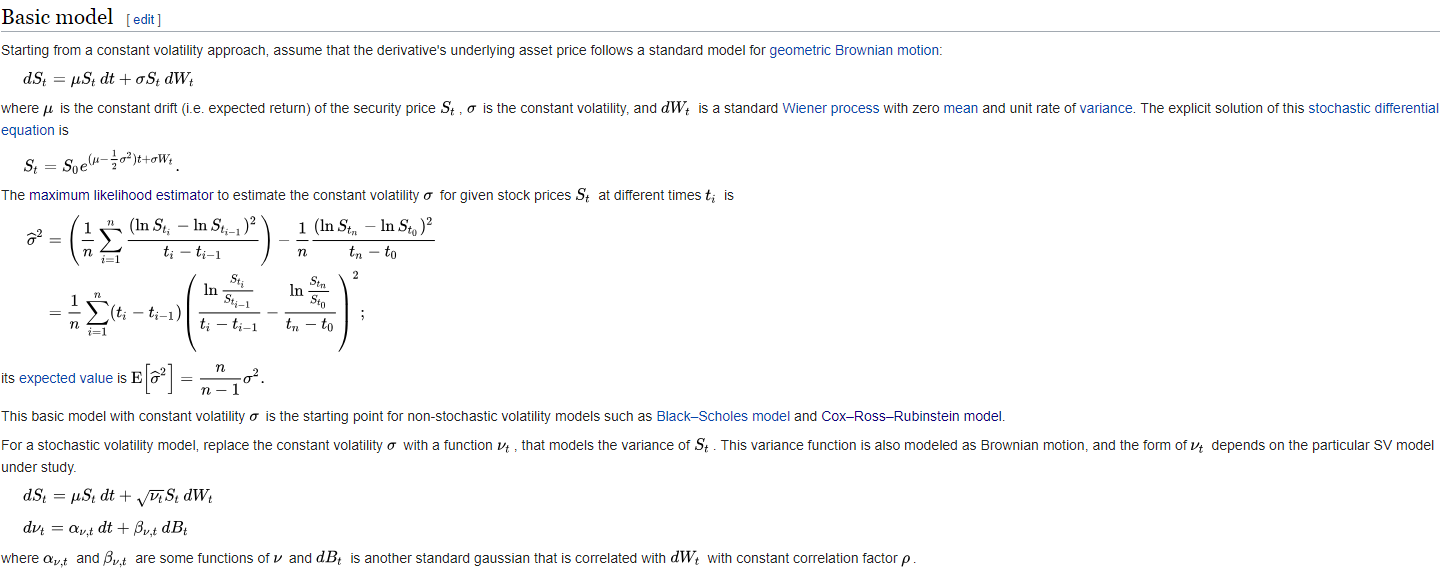
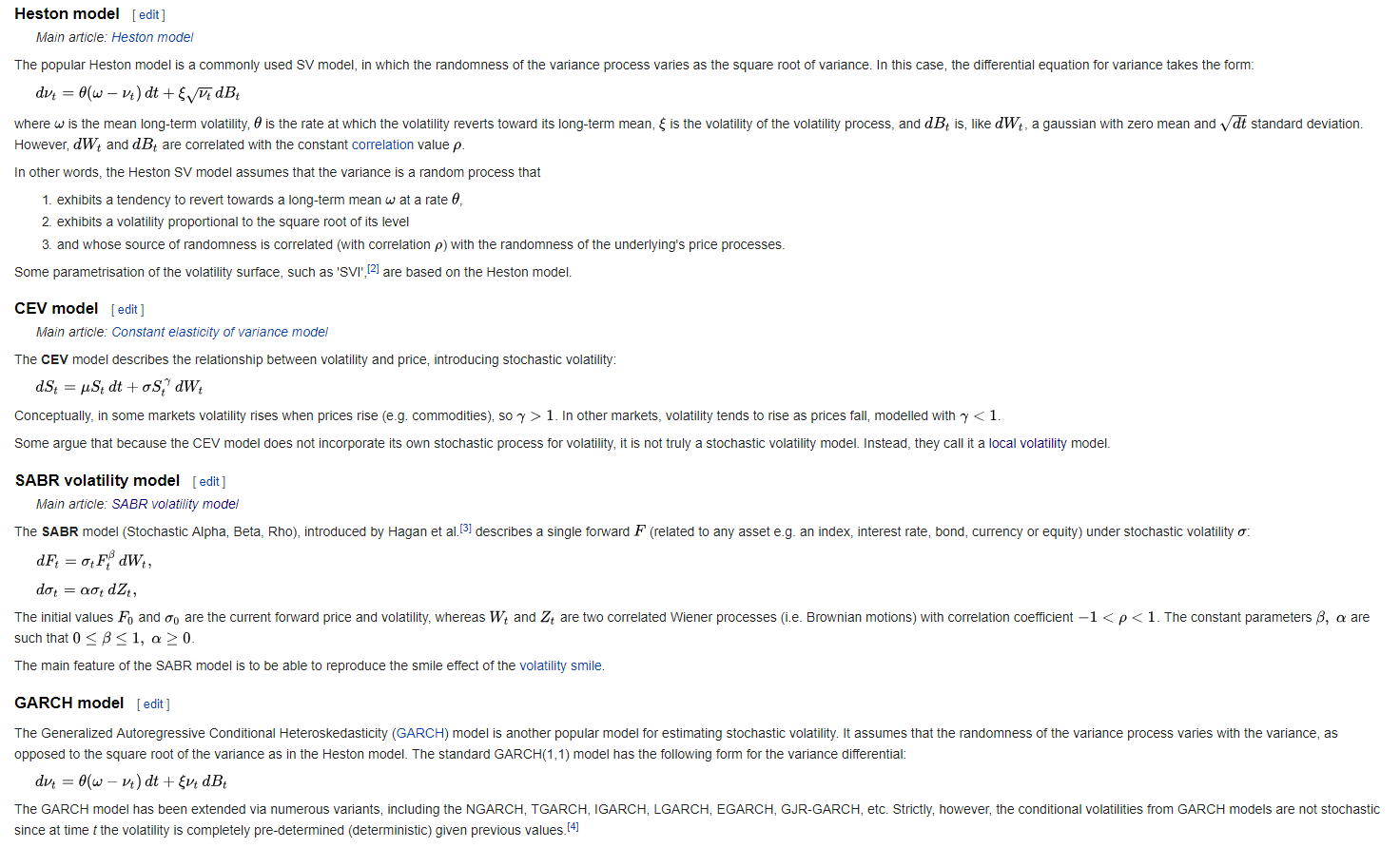
Although your reasoning is strong that a payer fixed, (receiving float) benefits from an increase in rates and hence should be call, in the interest market being long as in a swap or in a bond means benefitting from declining rates not rising rates, therefore the alternative reasoning is that it’s the receivers that are calls as they are the ones that benefit from declining rates!

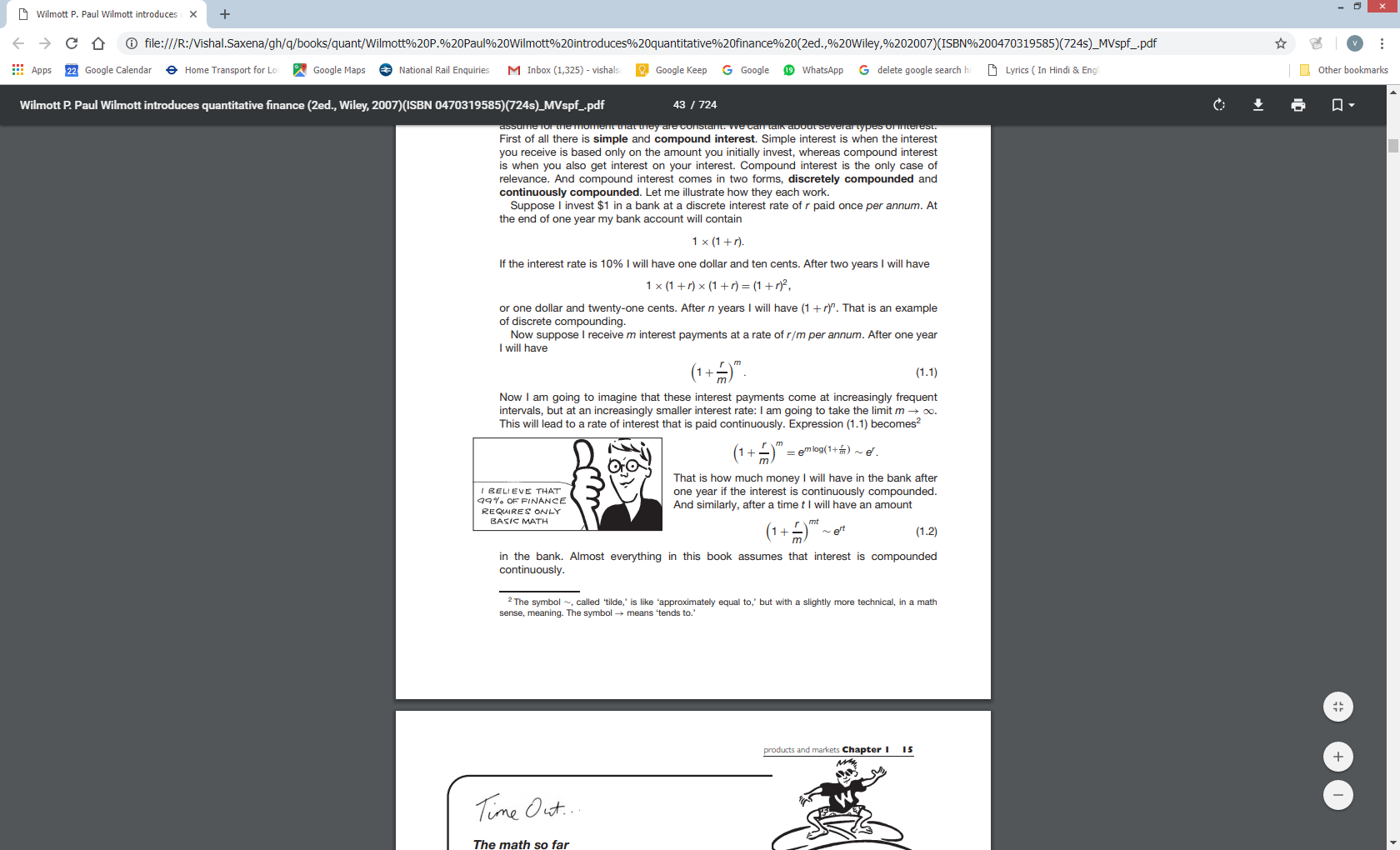
Don’t ever say long or short when it comes to swaps/swaptions, if you do, you specify long market (bond terminology) or long rates.

Therefore in the interest rate market for swaps and swaptions the terminology is payer and receiver and that is always a reference to fixed leg.

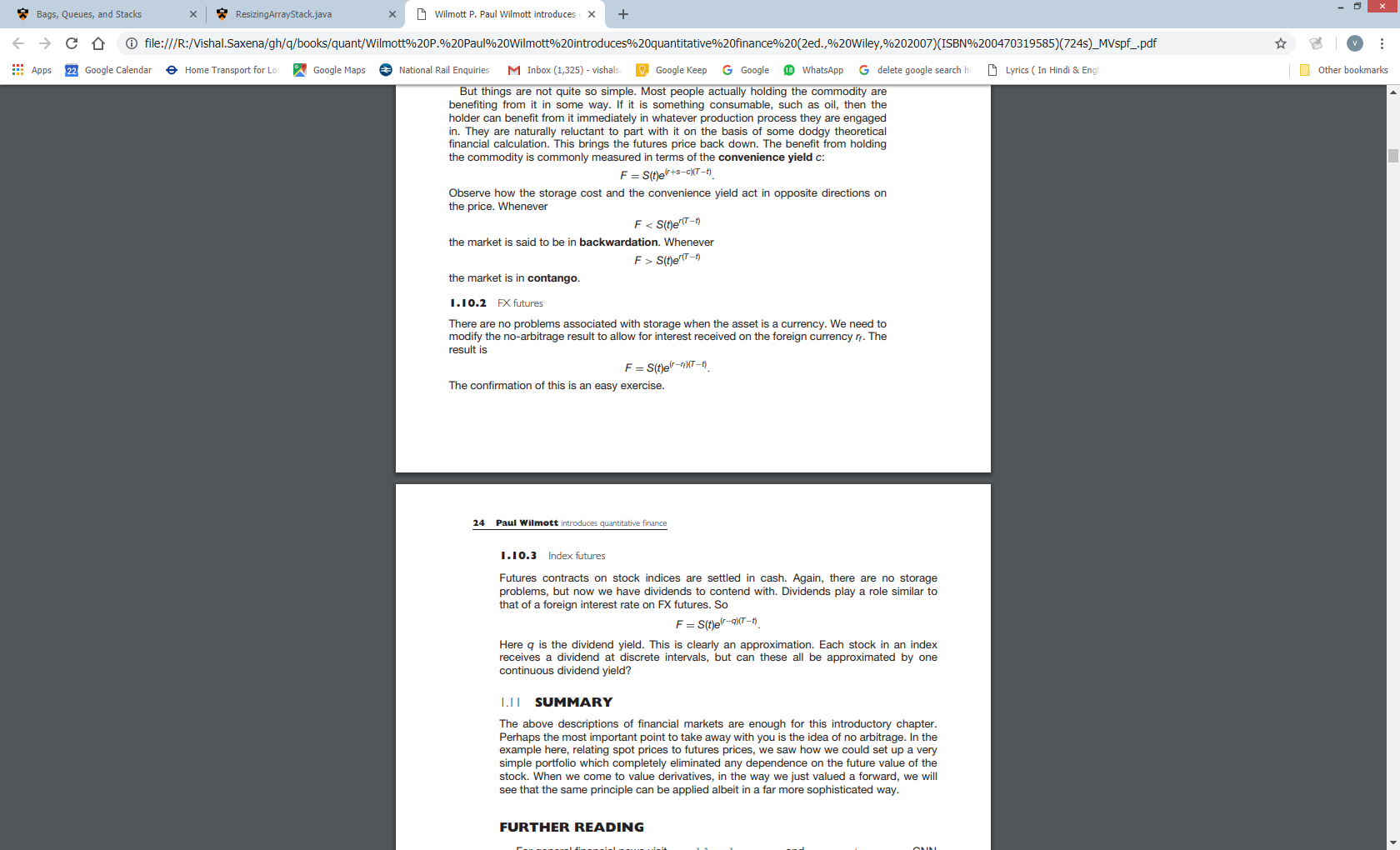
Swaptions vol cube is built of high strike payers and low strike receivers.

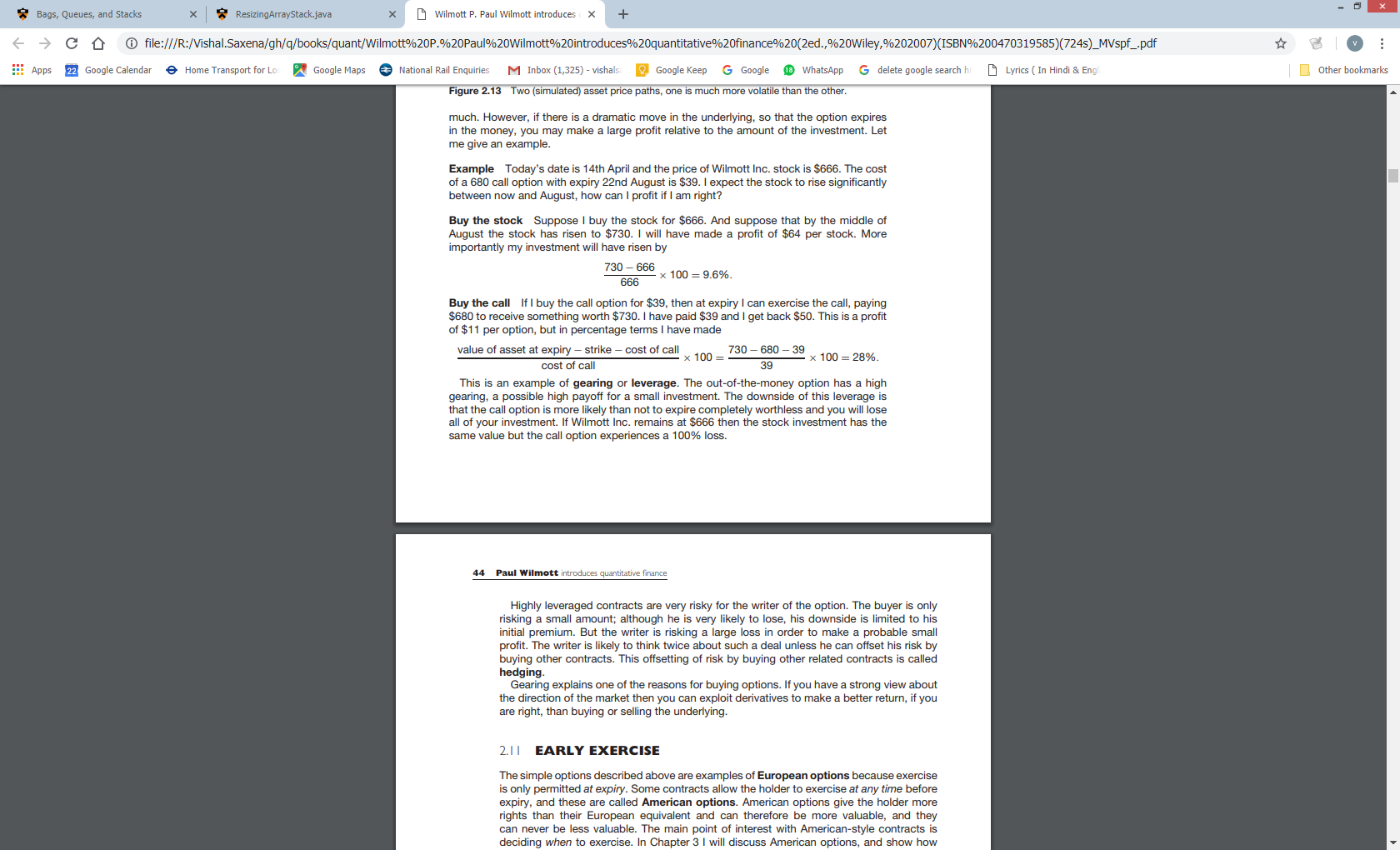


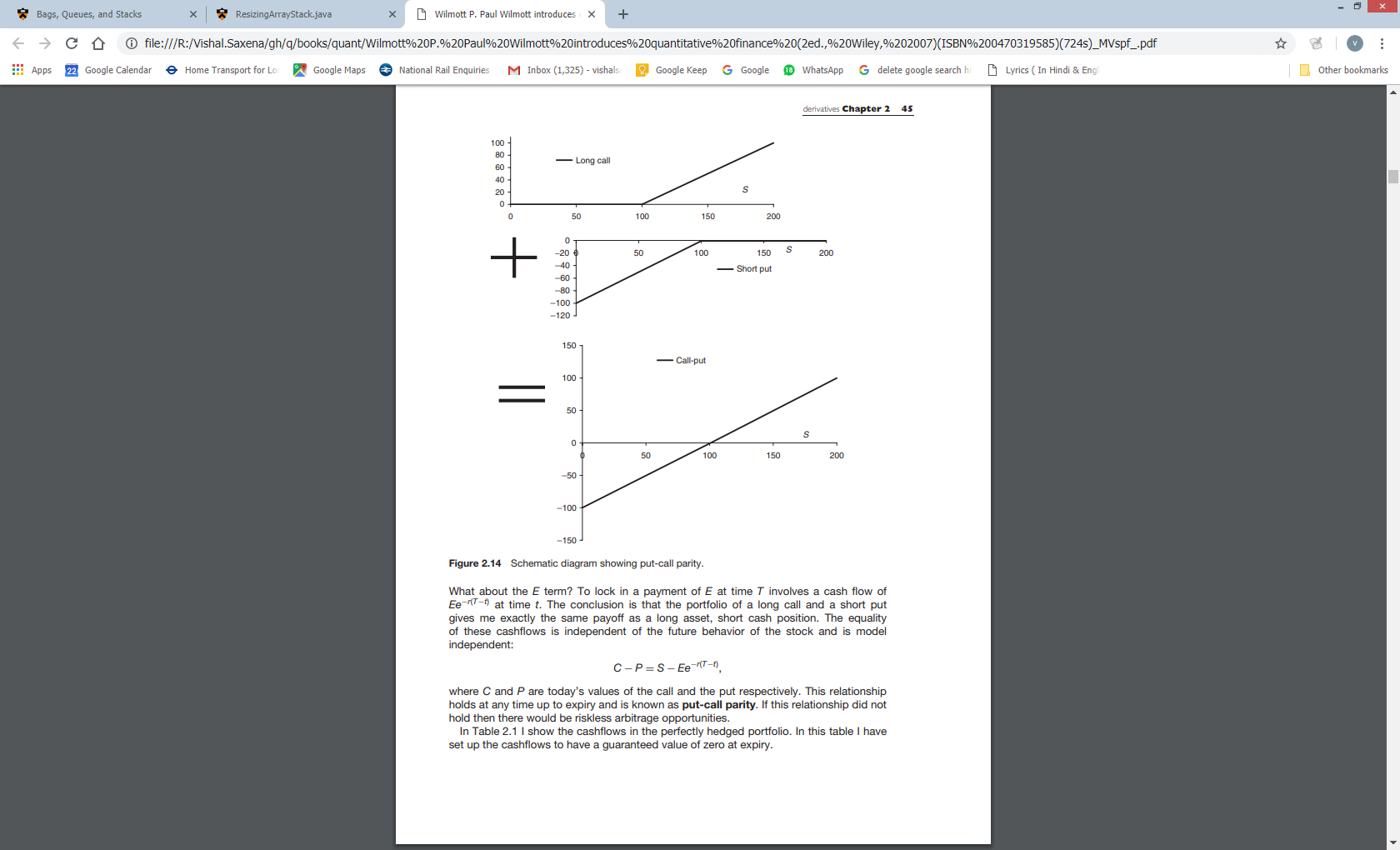


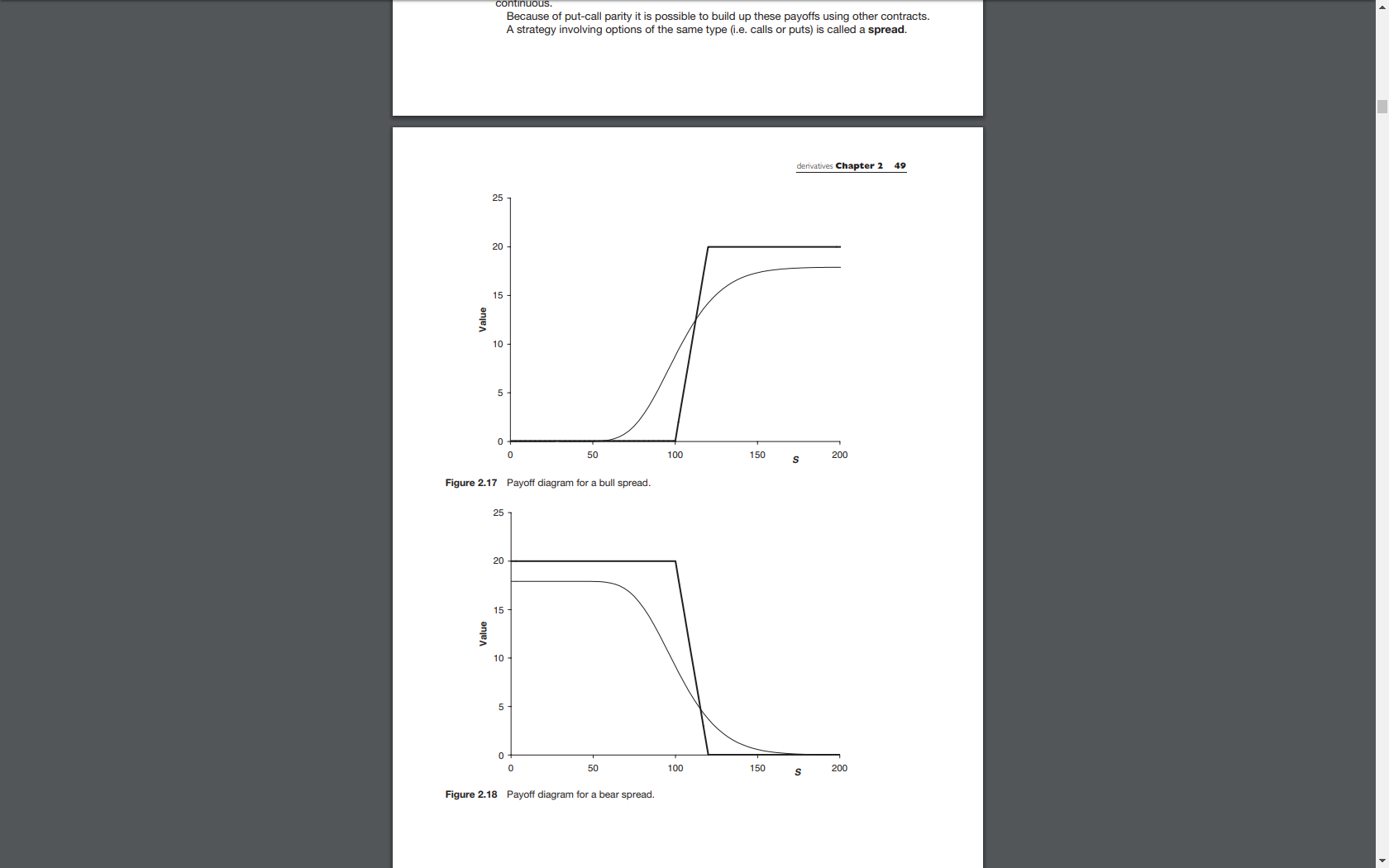


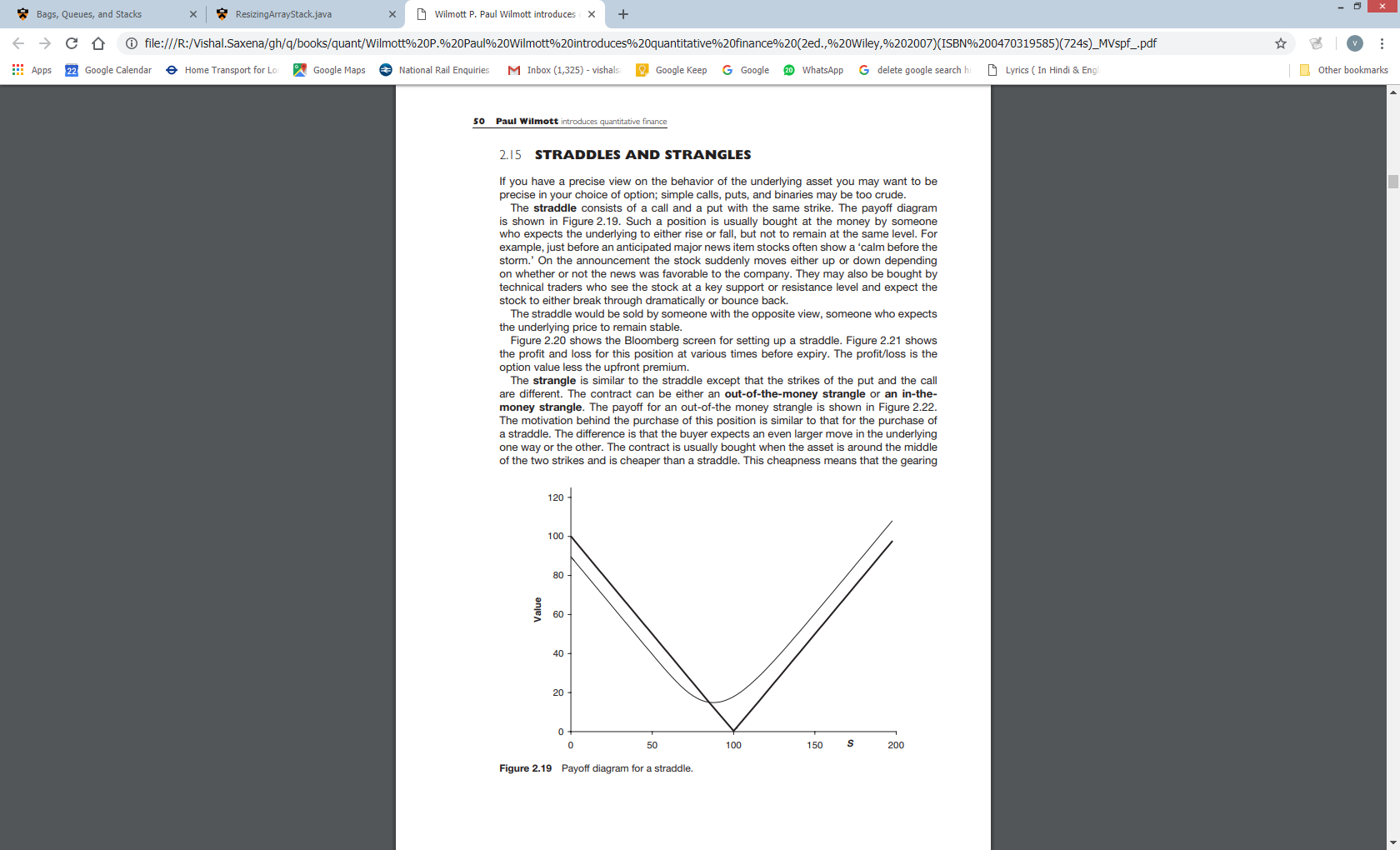


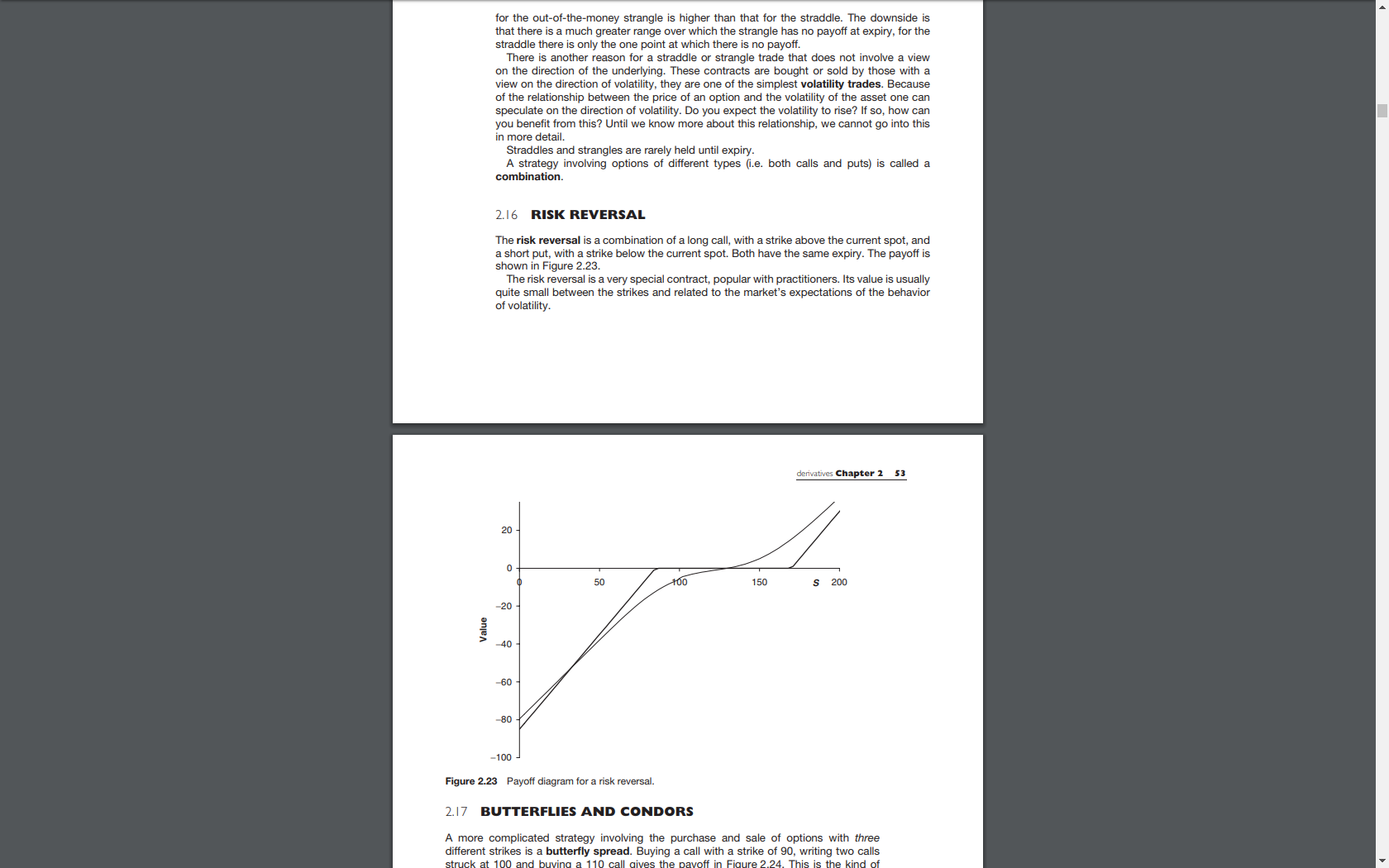


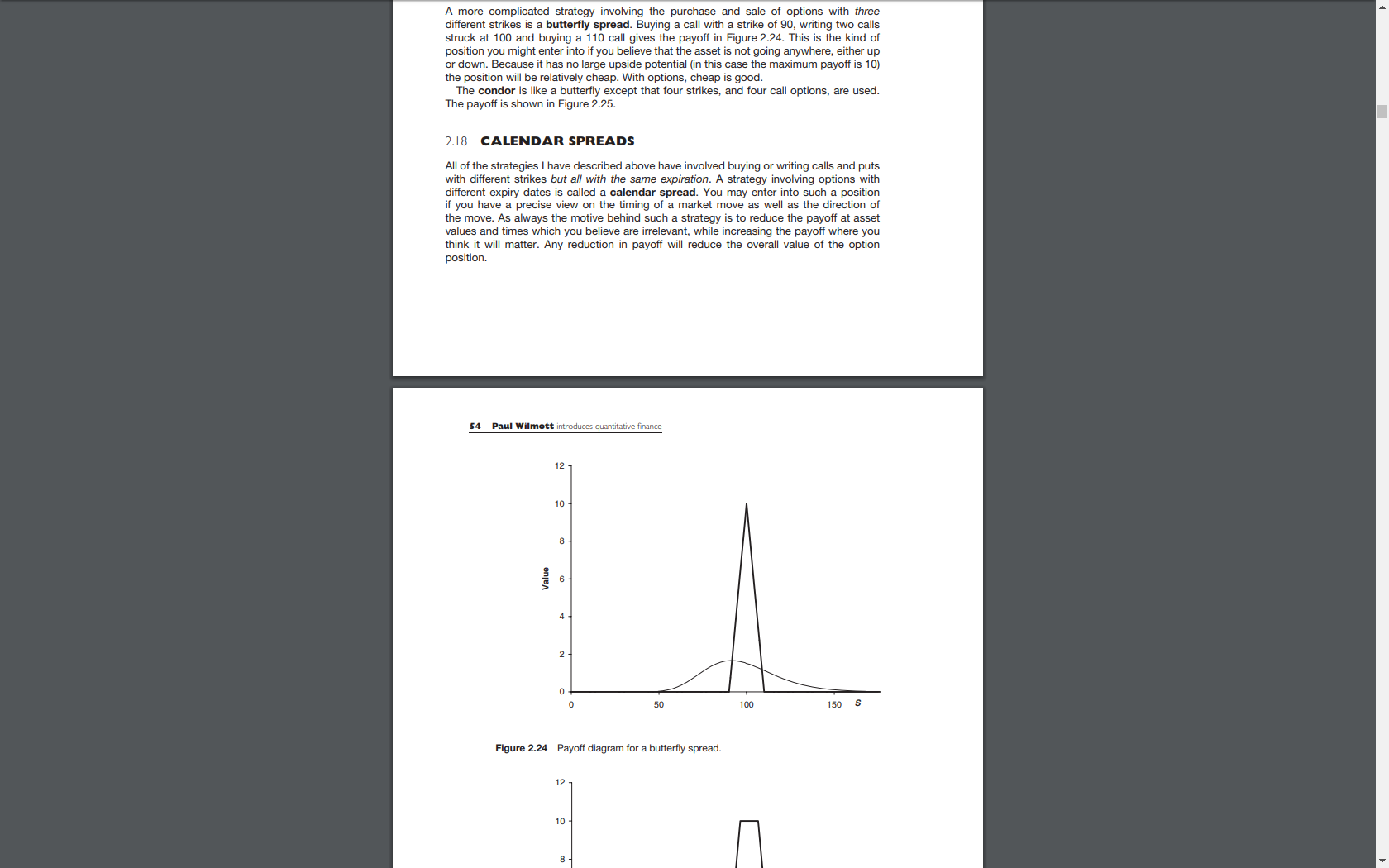


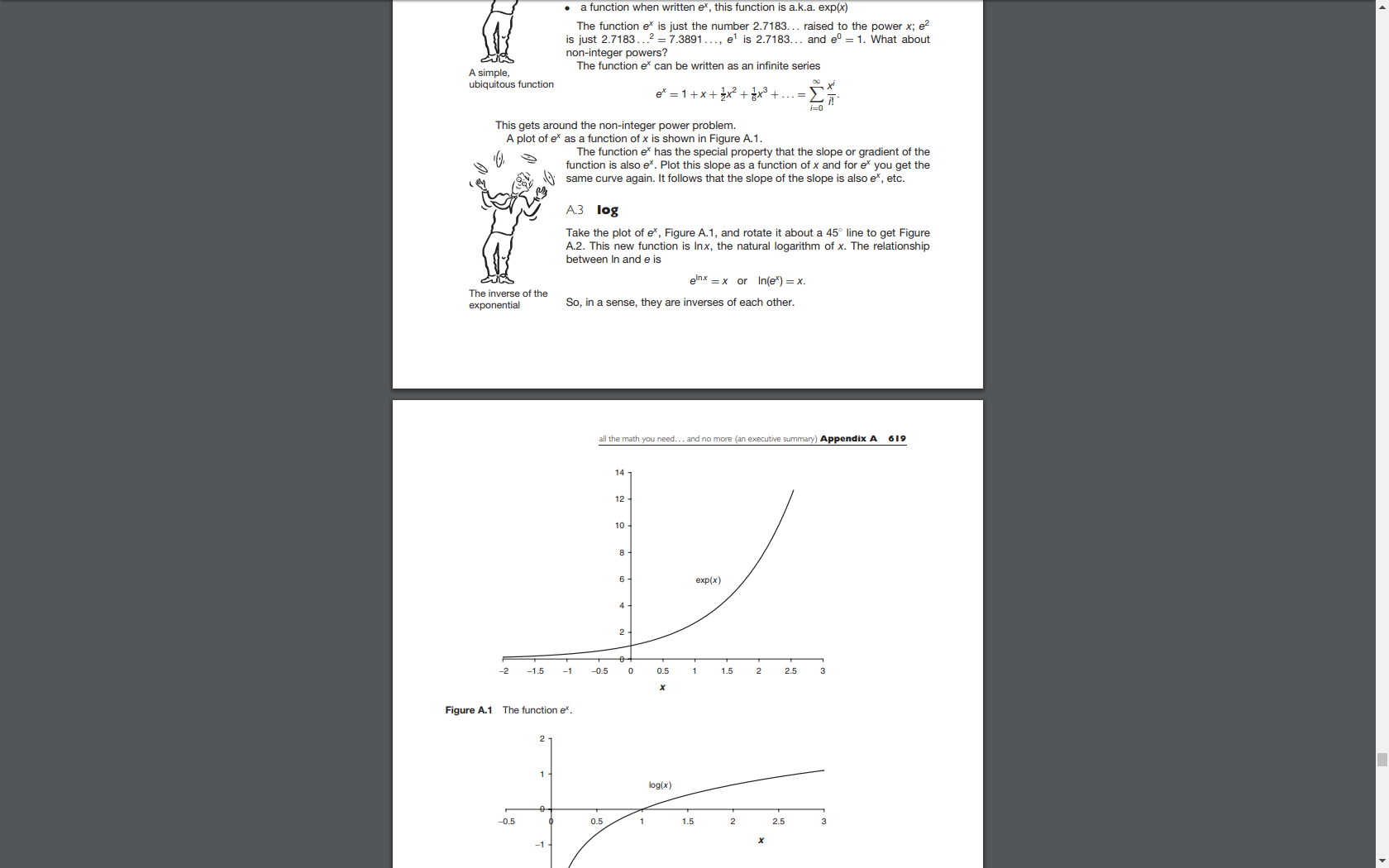


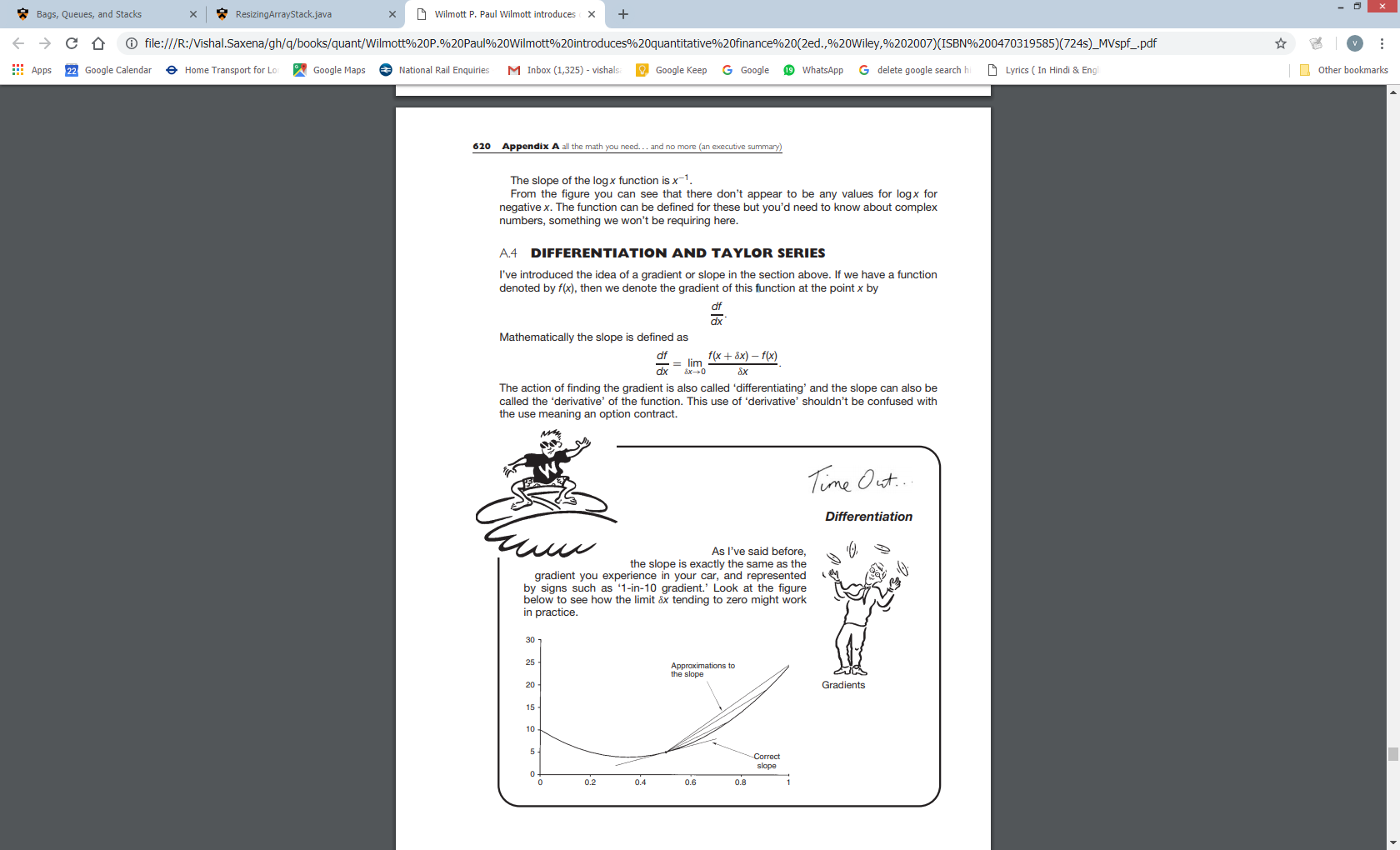


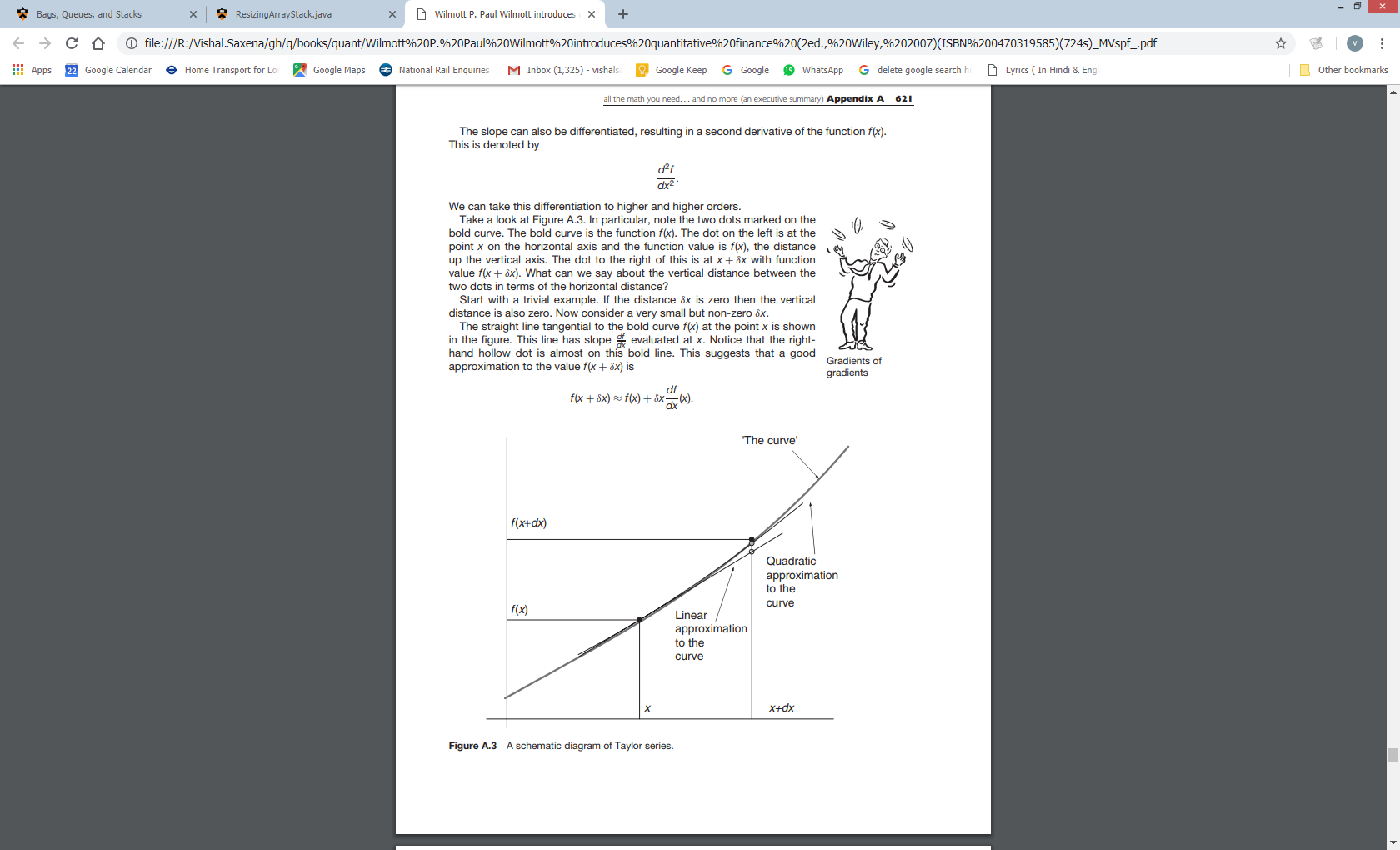


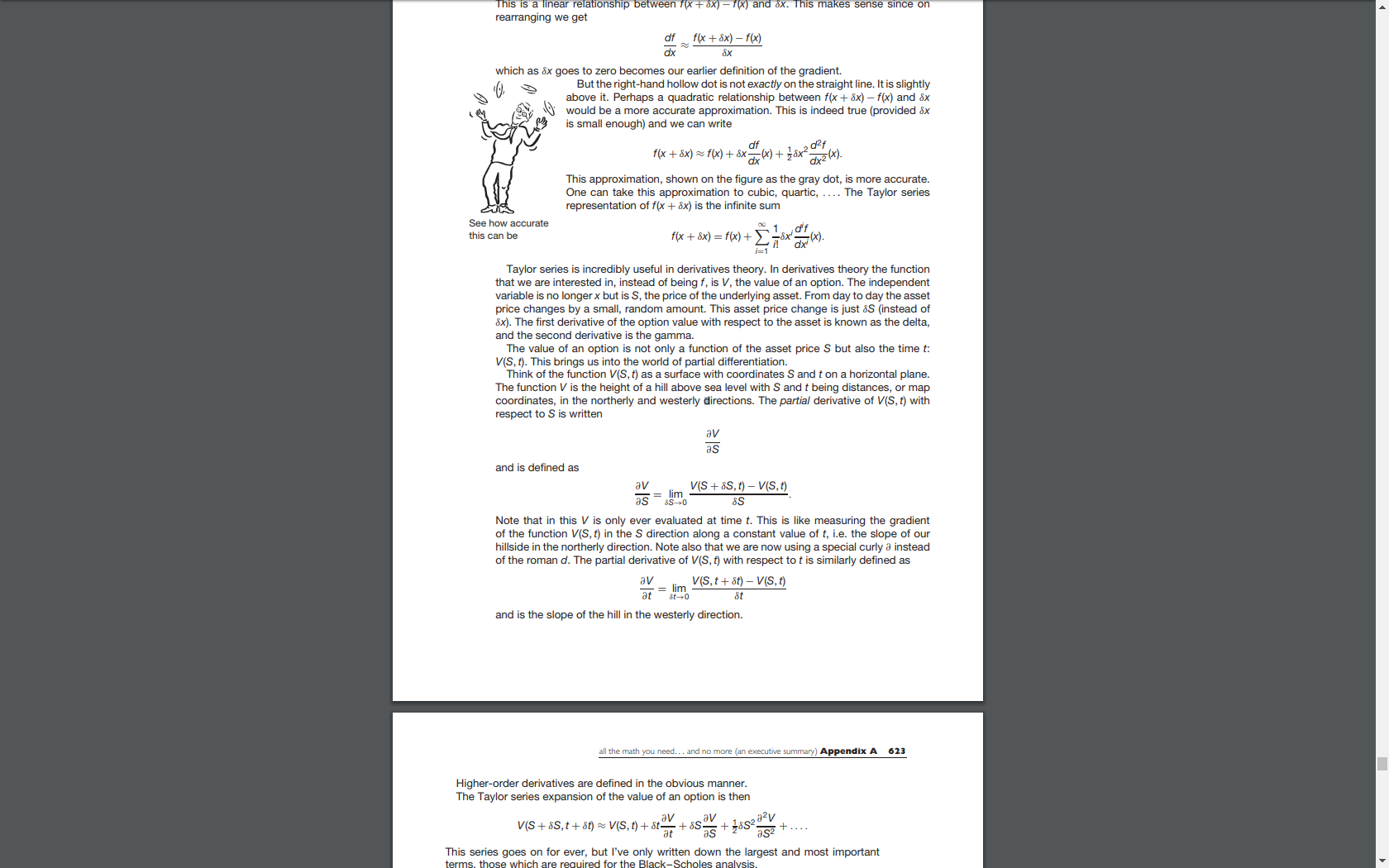


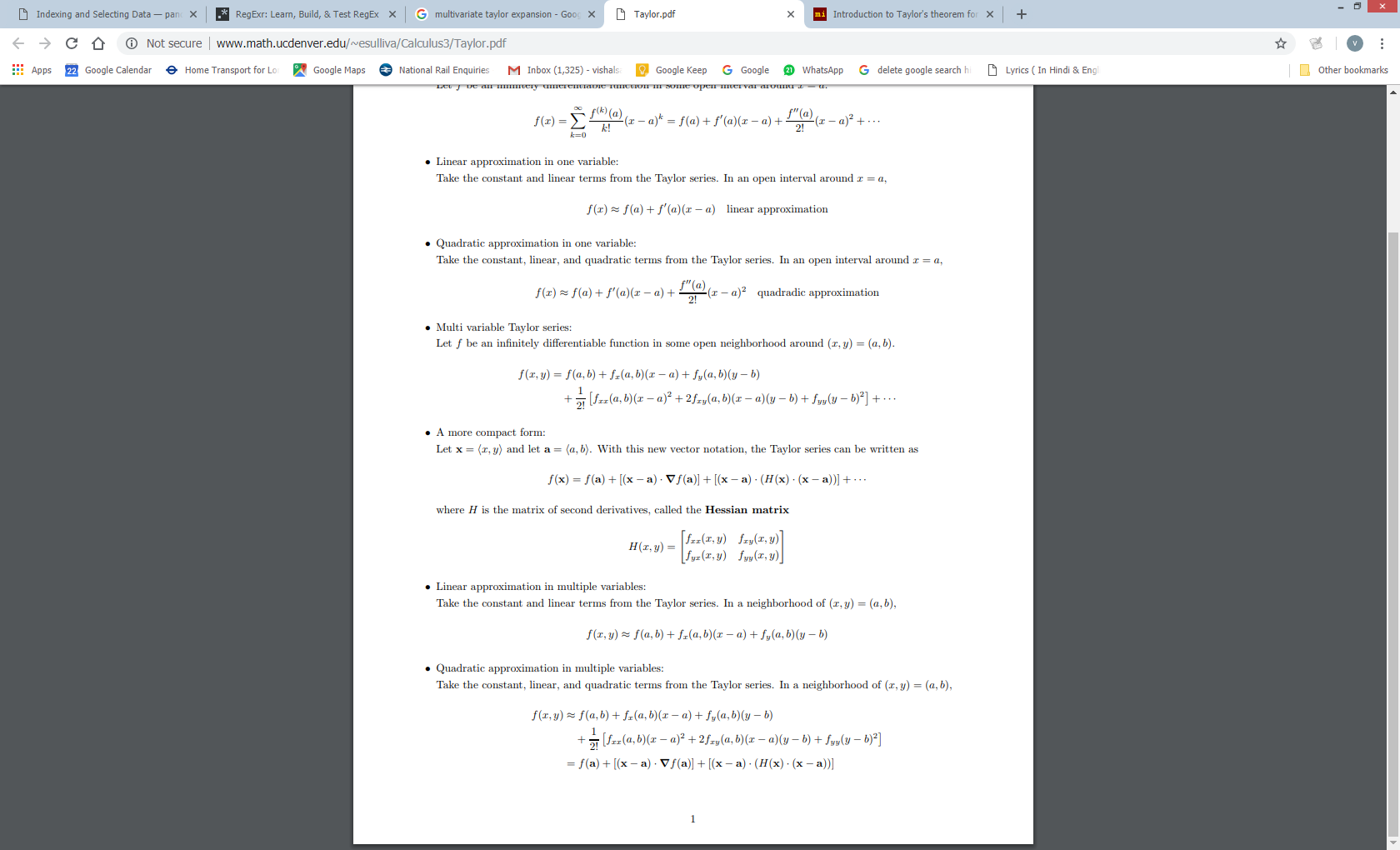




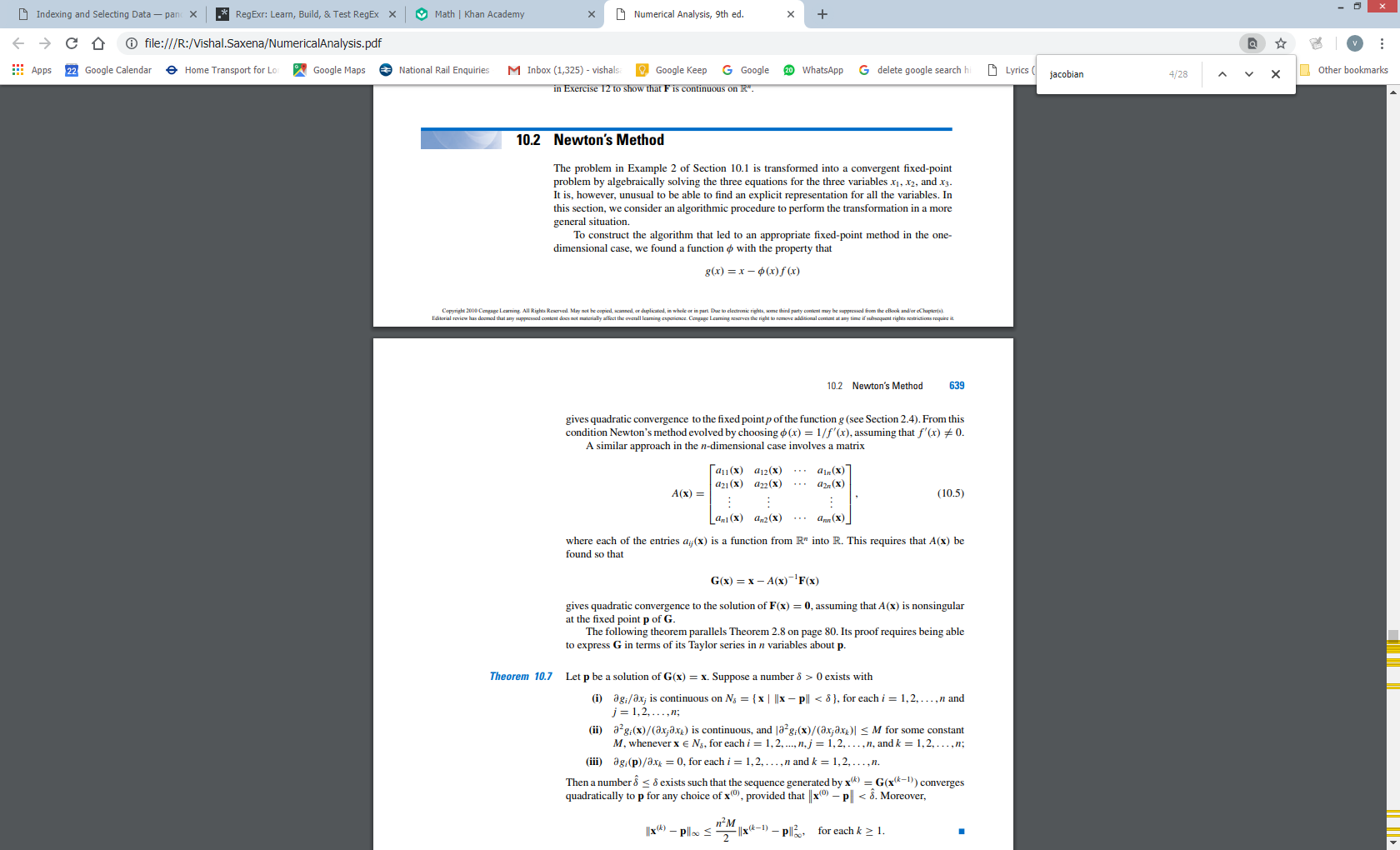


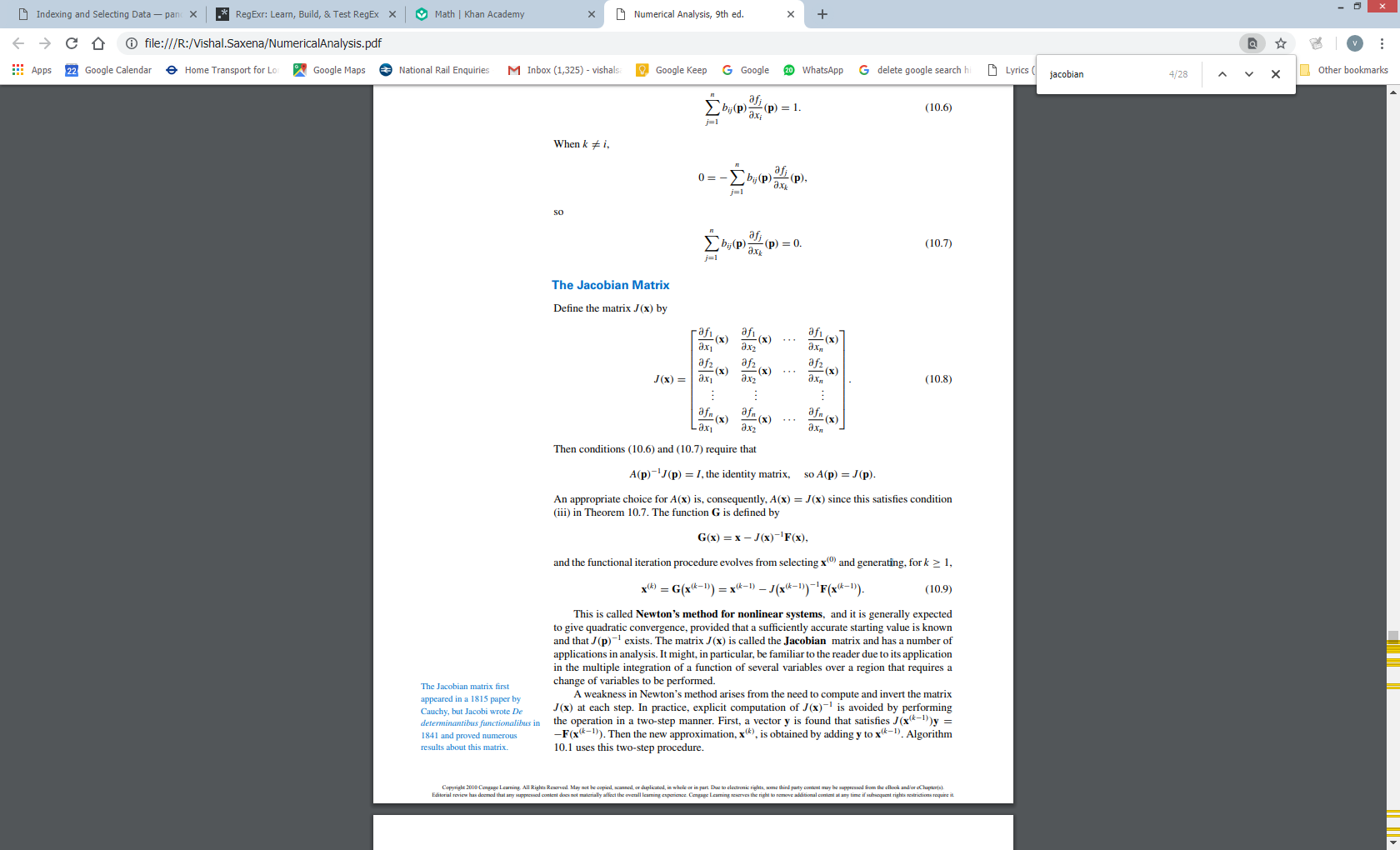


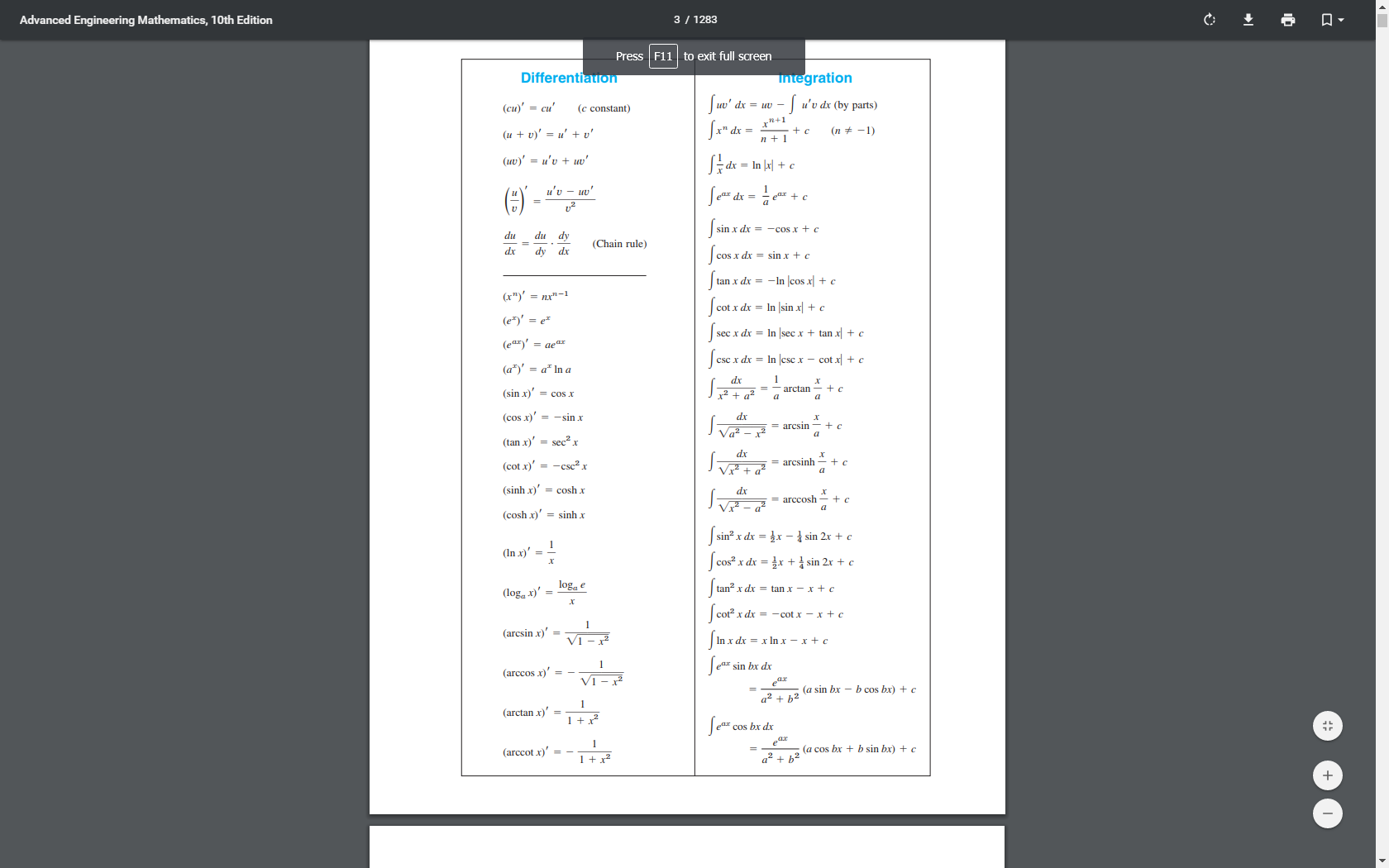


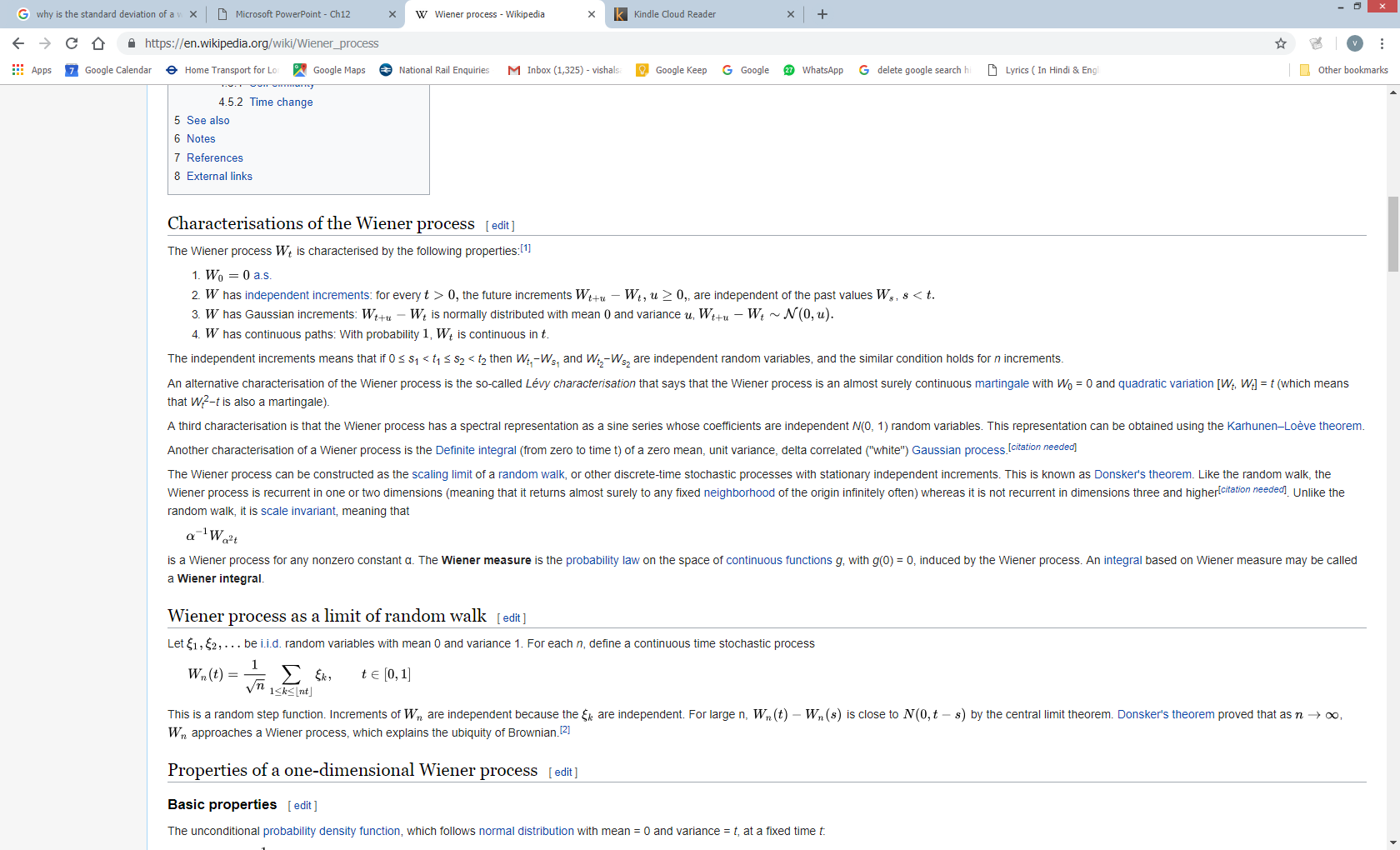


### Newton Rhapson

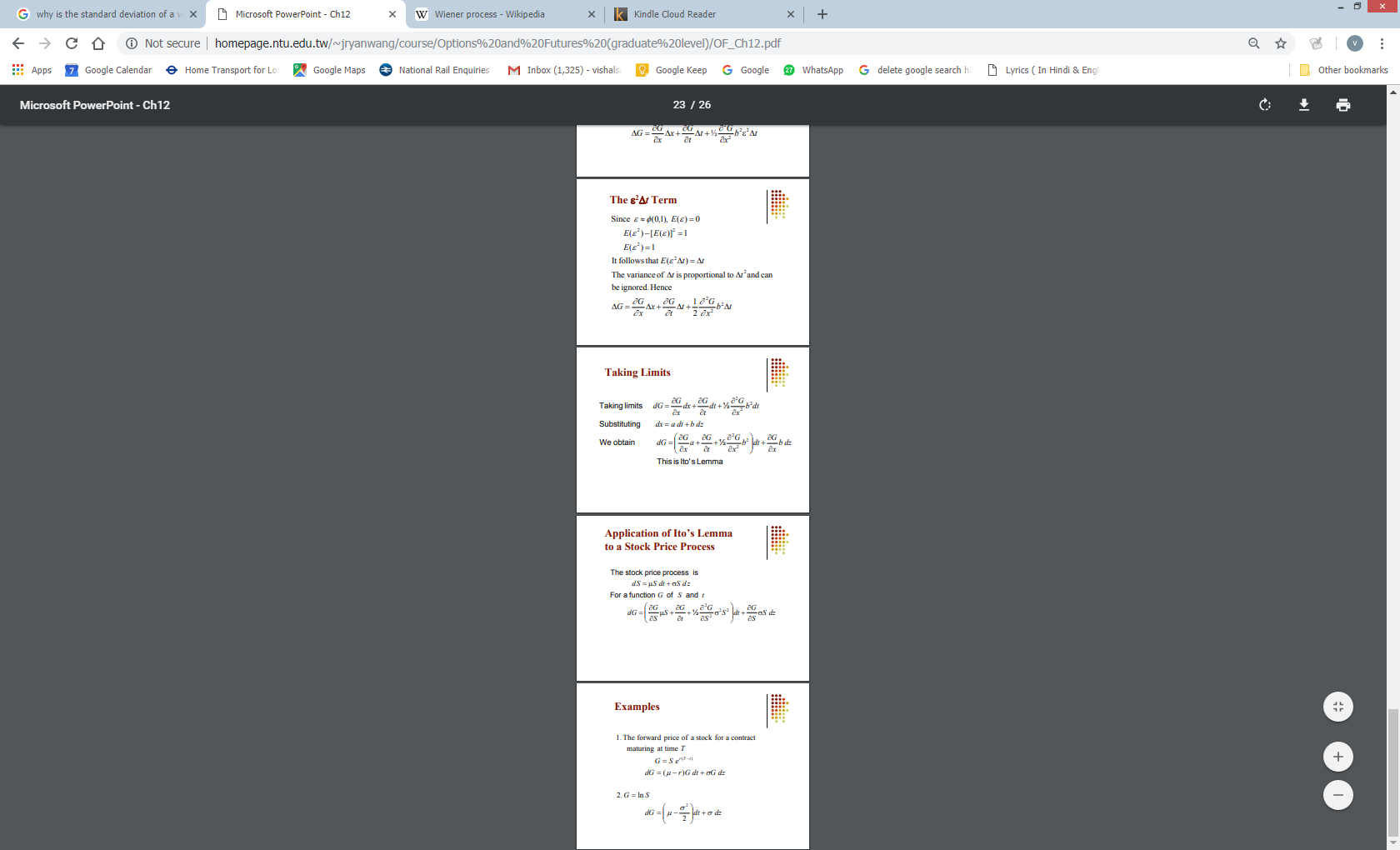
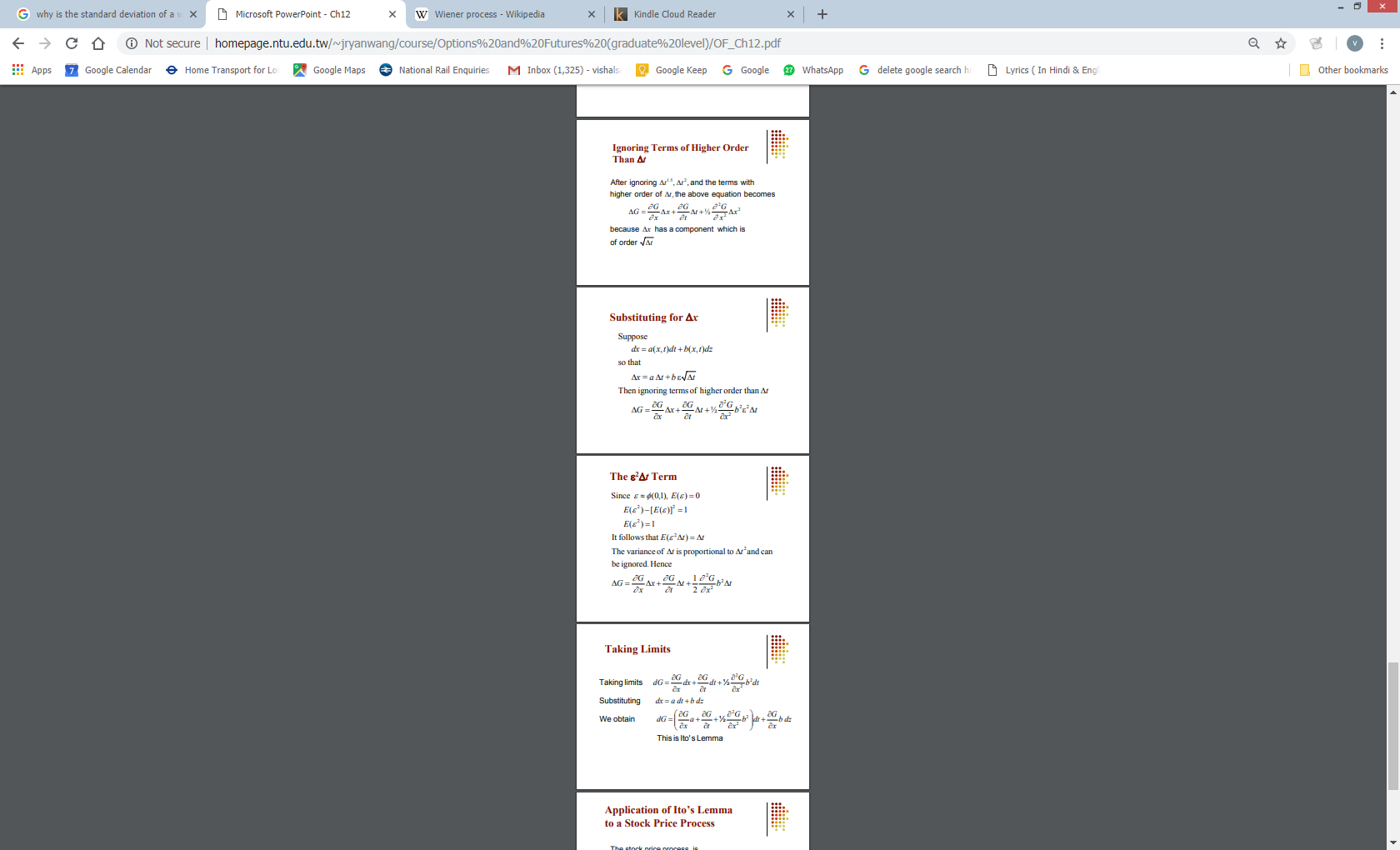
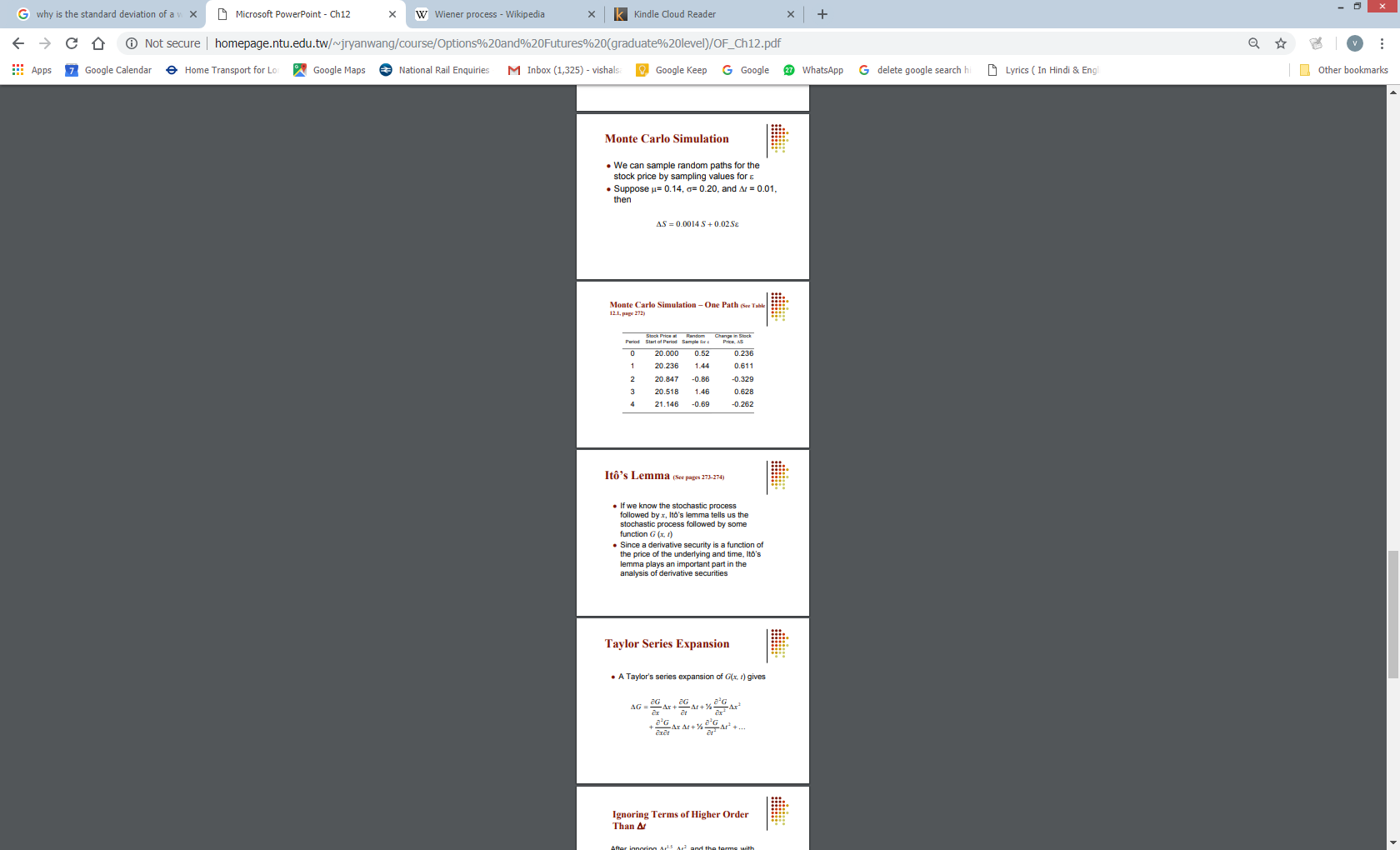
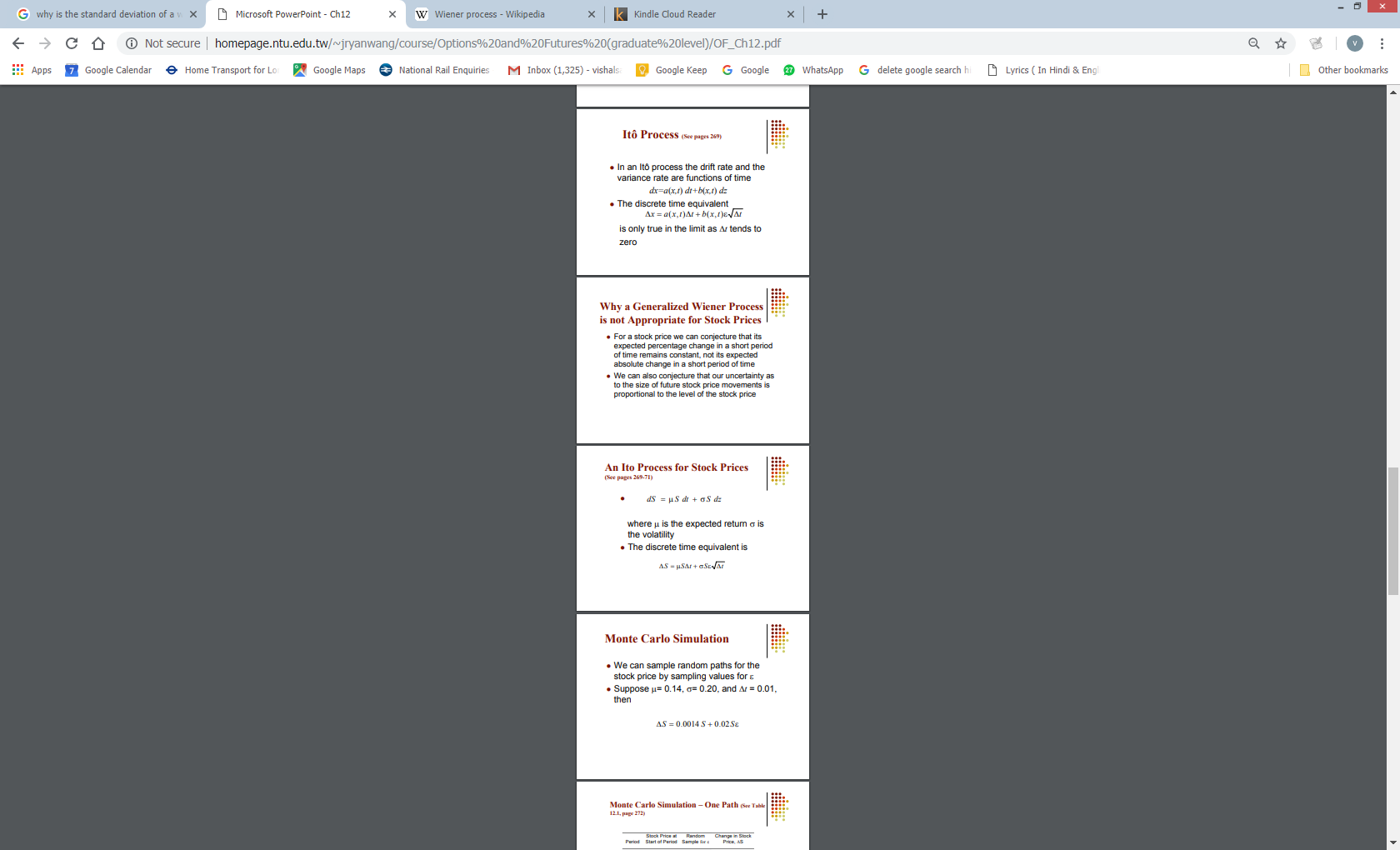
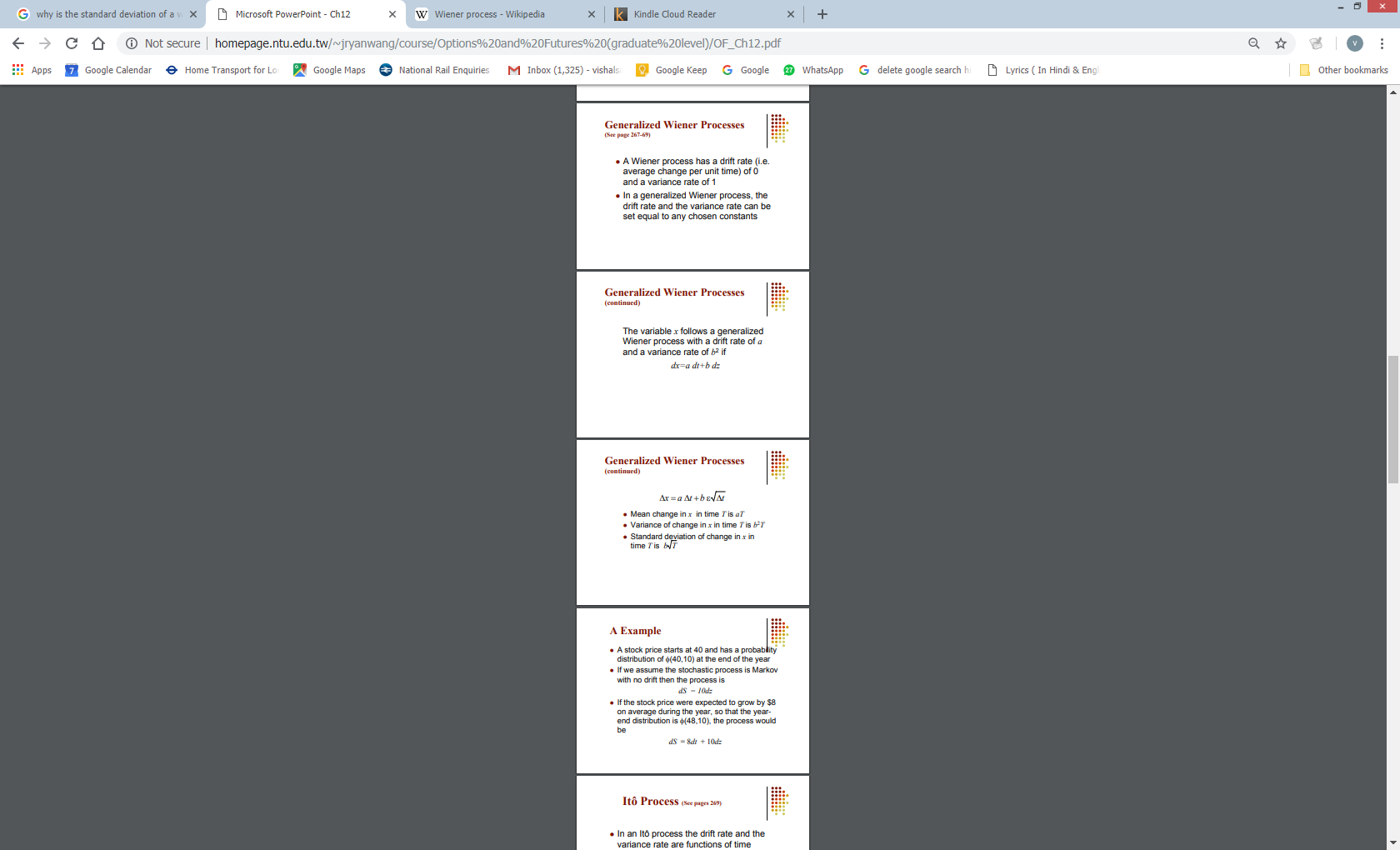
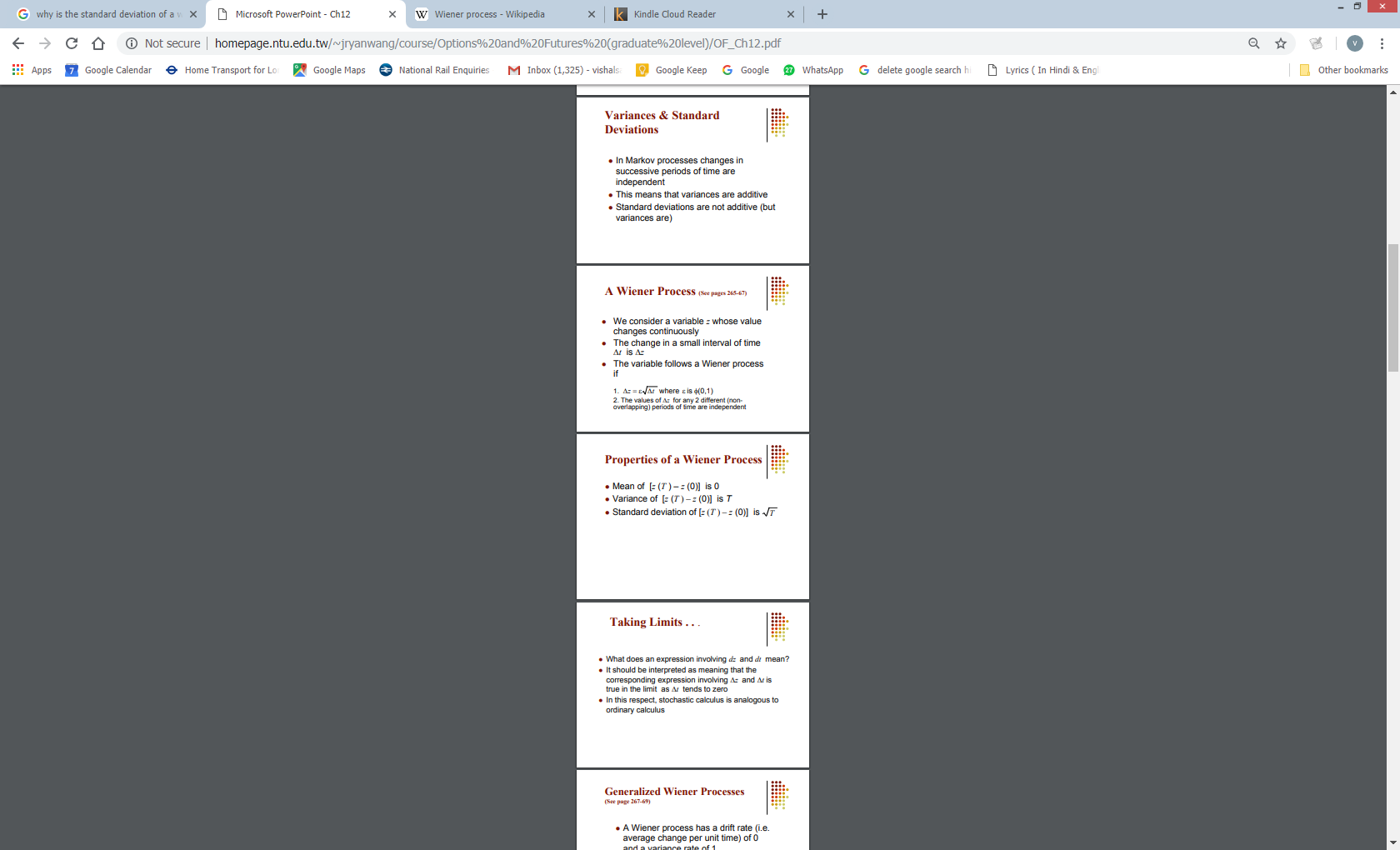
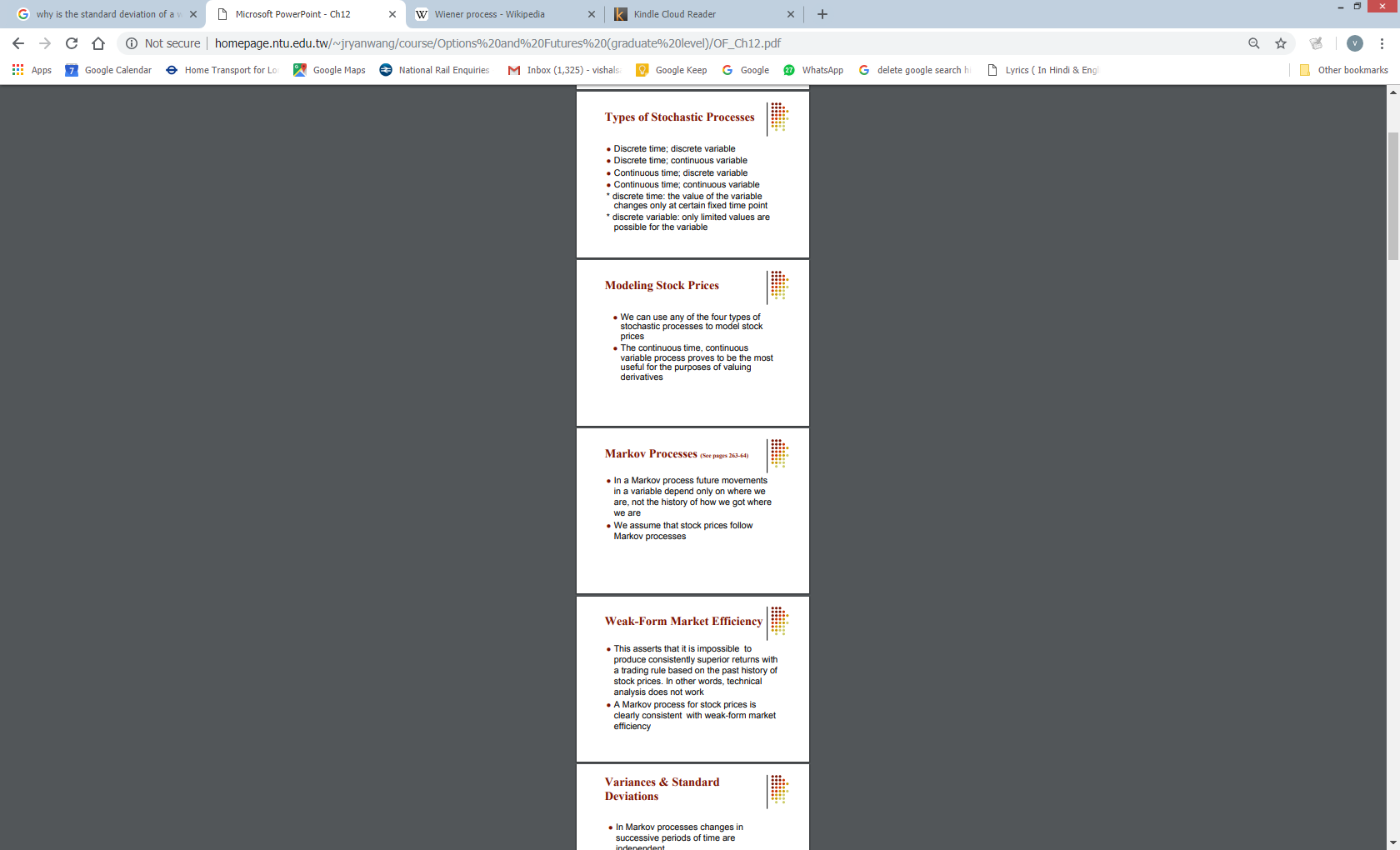








Wiener Processes and Itô’s Lemma



Mean is not additive. One 3 day period has movements of 5,6,7 $ in stock price, i.e. mean of 6$, another of 9,10,11 with a mean of 10$, the mean of the 6 day period is 8$

