**Mathematical Finance** Winter term 2023/2024
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# *Mathematical Finance: QF*

(not to be discussed in the exercise class)

**Exercise 1.** (*4 bonus points*)
Create a Mind-Map in which you link the following terms with each other using arrows and short explaining comments.
1. arbitrage 2. binomial tree model 3. cheapest superhedge 4. completeness 5. conditional expectation 6. contingent claim/derivative 7. density (process) 8. European option 9. equivalent martingale measure 10. fair price process 11. filtration 12. first fundamental theorem of asset pricing 13. forward and future 14. hedging strategy 15. law of one price 16. martingale 17. numeraire 18. predictable process 19. probability measure 20. random variable 21. replicable/ attainable 22. second fundamental theorem of asset pricing 23. self-financing strategy 24. $\sigma$-aditivity 25. $\sigma$-field 26. stochastic integral 27. stochastically independent 28. stochastic process 29. stopping time 30. supermartingale 31. upper price/ lower price 32. value process/ wealth process
If you think that important terms are missing in that list, please add them.

*Submission of the homework until: Thursday, 11.01.2024, 10.00 a.m. via OLAT.*