PROBLEM:
HEDGING AND INVESTMENT IN PRESENCE OF MARKET CONSTRAINTS

DESCRIPTION OF THE PROBLEM:
There are several well-known models for stock price evolution: Bachelier model; Black and Scholes model; Binomial model and others. These classical models do not into account such possible market restrictions as, for instance, different rates for borrowing and lending; transaction costs; budget restrictions; variable market volatility. Keeping in mind both theoretical and practical needs, we would like to develop hedging and investment methodologies in framework of above models with these additional restrictions.
We propose, for instance, to get appropriate formulae for call and put options of the European style in these generalized models with the above restrictions.
The tendencies in financial economics and insurance indicate the growing popularity of "equity-linked life insurance". Equity-linked insurance contract payments are based on some underlying assets (such as stocks and indexes). Thus, the results obtained can also be applied to the new competitive forms of insurance business.