The main aim of this thesis is to examine risk measures which are used in finance and insurance. This work is focused on describing their mathematical characterizations and their relationships. In this thesis are discussed coherent risk measures, spectral risk measures and distorted risk measures. Considerable attention is given to value at risk which is connected to a certain extent with all risk measures which are mentioned above. Attention is also aimed on using of these risk measures on illustrative examples which make their characteristic clear. Further there are demonstrated risk measures for quantification risk of portfolio based on real data.