

Coursework Assignment for the Course “Financial Derivatives”

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Assume that you have an equity index with spot price 500, dividend yield 3.00% and volatility 35% per annum. The risk-free interest rates (annual compounding) are constant and equal to 4%. The dividend yield and the volatility of the index are both constant for all maturities and the Black - Scholes model applies.

Calculate:

1. The price and the Greeks of a **European Call option** with strike $K = 650$ and maturity 1.5 years.
2. For the same underlying asset, use a five-step binomial tree (with an annual time step) to price an **American Put option** with a maturity of 5 years. The exercise price is $K = 525$. Calculate the delta of the option.