This assignment should be done with Jupyter Notebook

1. Write a python function to price American option on trinomial tree with the following input parameters:
    a. Spot price
    b. Strike price
    c. Time to maturity (in fraction of years)
    d. Risk free rate
    e. Dividend yield
    f. Stock return volatility
    g. Call or Put
    h. Choice of trinomial schema: CRR or JR
    i. Number of time steps

2. Carry out the following using your python pricer, and write a short paragraph to describe your observation in each of the exercises below.
    a. On a CRR trinomial tree, price the following American call option **and** plot the early exercise boundary as a function of time.
        i. S = 100
        ii. K = 80
        iii. T = 1
        iv. r = 0
        v. d = 0.2
        vi. Vol = 0.3
        vii. Number of time steps = 250

    b. Using JR trinomial tree, price the following American put option
        i. S= 100
        ii. K = 120
        iii. T = 1
        iv. R = 0.04
        v. D = 0
        vi. Vol = 0.3
        vii. Number of time steps = 250

    c. Continue with the above put option
        i. Plot option price vs changing spot price while holding other parameters constant: $S \in [50, 160]$
        ii. Plot option price vs changing time to maturity while holding other parameters constant: $T \in [0.25, 2]$
        iii. Plot option price vs changing volatility while holding other parameters constant: $vol \in [0.15, 1.5]$