Constructor University
Fall 2025

October 10, 2025

Stochastic Modeling and Financial Mathematics

Quiz 2

Name: _____

1. **(3 points)** Suppose you have set up your own *git* repository. Now you are making some local changes in some of your repository files, and you would like to get those included in the repository hosted on bitbucket. You are using the command line to do this. Write down the necessary commands to achieve this.

2. **(3 points)** Define what a European Call option is.

3. **(10 points)** Suppose the interest rate $r = 0$, and we consider a binary model where the current stock price is 1000 EUR, and after one time step it can either go up to 2000 EUR or down to 500 EUR. Determine the fair price of a call option with strike price $K = 1250$ EUR.

4. **(4 points)** Below someone tried to write python code to plot a parabola (for x-values between -2 and 2) and save the figure in pdf format. However, there are two mistakes in the code. Find and correct both mistakes.

```
from pylab import *

N = 1000
xmin = -2
xmax = 2

def f(x):
   return x**2

figure()
plot(f(x))
savefig('Test_plot.pdf')
show()
```