Week 7 Proejct

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Here’s the result of greeks calculated by BSM:

Put

```
{'value': {'option value': 13.751949648187235,
  'intrinsic value': 13.969999999999999,
  'time value': -0.21805035181276367},
 'greeks': {'delta': -0.9169889291037313,
  'gamma': 0.016830979206204362,
  'theta': -0.005520019492833374,
  'vega': 0.06942036604441162,
  'rho': -0.1376459723603804},
 'Carry Rho': 13.679464983478951}
```

Call

```
{'value': {'option value': 0.3359599437090406,
  'intrinsic value': 0,
  'time value': 0.3359599437090406},
 'greeks': {'delta': 0.08301107089626869,
  'gamma': 0.016830979206204362,
  'theta': -0.02227999433394731,
  'vega': 0.06942036604441162,
  'rho': 0.011031223810791666},
 'Carry Rho': 1.2383432356991317}
```

Here’s the result of greeks calculated by infinite diff method:

```
Call  delta : 0.08297134424122277 Gamma : 0.016822917423553463 Theta : -0.09724280164056233
Put  delta : -0.9165495924605693 Gamma : 0.016822917814351968 Theta : 0.3323717247206667
```

These two sets of Greeks are very similar.

The graph below includes values of American Option value with or without dividends:

```
value of American call Option w/ div is : 0.29181370999094486
value of American put Option w/ div is : 14.627752573353897
value of American call Option w/o div is : 0.3359668460797688
value of American call Option w/o div is : 14.038608480309883
```