

```

In[74]:= (* These are functions the call for a program to be loaded (Needs)
          the program being loaded is the standard normal density function (ndist)
          and the cumulative distribution function CDF *)

Needs["Statistics`NormalDistribution`"]

In[75]:= ndist = NormalDistribution[0, 1]
          CDF[ndist, .25]

Out[75]= NormalDistribution[0, 1]

Out[76]= 0.598706

In[77]:= (* Check this value with the cumulative normal distribution function
          on the class webpage *)

(* Loading parameters for the strangle, the exercise prices were
   selected to conform to the values used in RSD chapter 9
   with exercise prices selected to be delta neutral *)
r = .06
T = .4
S = 48
X = 54.3
v = .3

(* Calculating the d' s, and prices and position value *)
x = ((Log[S/X] + (((r + (.5*(v^2))) * T)))) / (v*Sqrt[T])
y = x - (v*Sqrt[T])

Q = (S * CDF[ndist, x]) - ((X * Exp[-r*T]) * CDF[ndist, y])
P = (S * (CDF[ndist, x] - 1)) - ((X * Exp[-r*T]) * (CDF[ndist, y] - 1))
V = P + 2 Q

(* Calculating the Greeks *)
M = (3 * CDF[ndist, x]) - 1
G = 3 * (1 / (S * v * Sqrt[T])) * PDF[ndist, x]
W = (((S * v) / (2 * Sqrt[T])) * PDF[ndist, x]) + (((X * Exp[-r*T]) * r) * CDF[ndist, y])
WW = 3 W - ((X * Exp[-r*T]) * r)
Z = S - (X * (Exp[-r*T]))

Out[77]= 0.06

Out[78]= 0.4

Out[79]= 48

Out[80]= 54.3

Out[81]= 0.3

Out[82]= -0.428611

```

```
Out[83]= -0.618348
```

```
Out[84]= 1.82048
```

```
Out[85]= 6.83279
```

```
Out[86]= 10.4737
```

```
Out[87]= 0.00230953
```

```
Out[88]= 0.11988
```

```
Out[89]= 4.99605
```

```
Out[90]= 11.8074
```

```
Out[91]= -5.01231
```

```
0.496888
```