Matplotlib

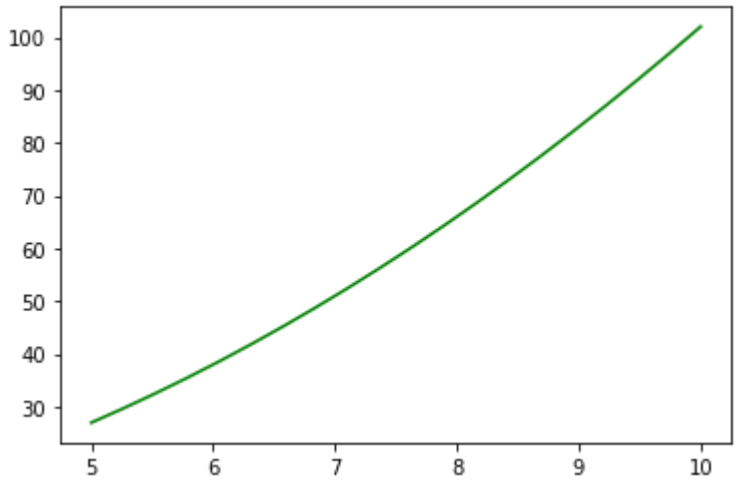
In [55]:
```
1 from matplotlib import pylab
```

In [56]:
```
1 import numpy as np
2 x=np.linspace(5,10,20)
3 y=x*x+2
4 print(x)
5 print(y)
```

```
[ 5.          5.26315789  5.52631579  5.78947368  6.05263158  6.31578947
  6.57894737  6.84210526  7.10526316  7.36842105  7.63157895  7.89473684
  8.15789474  8.42105263  8.68421053  8.94736842  9.21052632  9.47368421
  9.73684211 10.        ]
[ 27.          29.70083102  32.5401662   35.51800554  38.63434903
  41.88919668  45.28254848  48.81440443  52.48476454  56.29362881
  60.24099723  64.32686981  68.55124654  72.91412742  77.41551247
  82.05540166  86.83379501  91.75069252  96.80609418 102.        ]
```

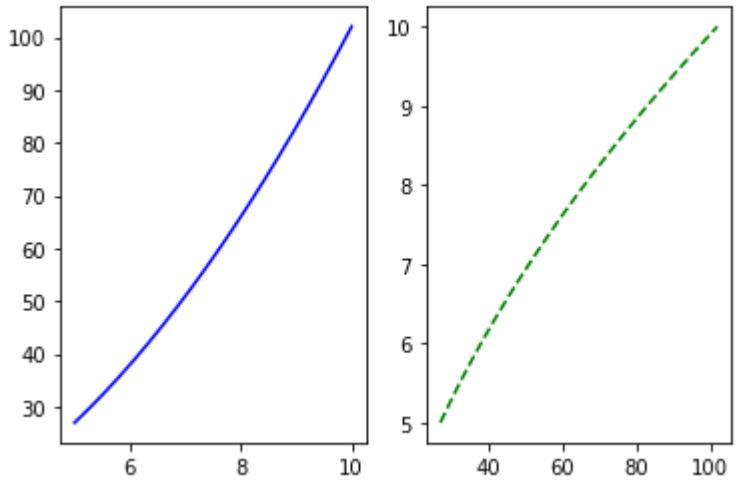
In [57]:
```
1 pylab.plot(x,y,"g")
```

Out[57]:
```
[<matplotlib.lines.Line2D at 0x175f3121700>]
```



In [58]:
```
pylab.subplot(1,2,1)#rows,columns and indexes
pylab.plot(x,y,"b")
pylab.subplot(1,2,2)
pylab.plot(y,x,"g--")
```

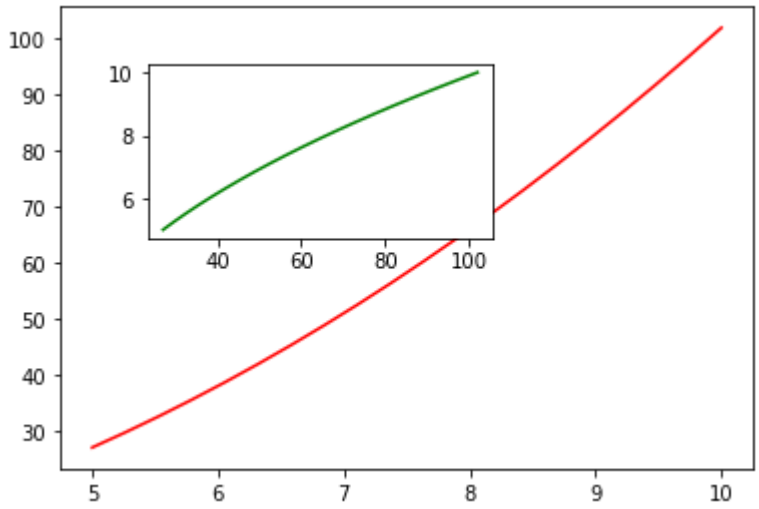
Out[58]: [<matplotlib.lines.Line2D at 0x175f3334790>]



In [62]:
```
from matplotlib import pyplot as plt
plt.show()
%matplotlib inline
```

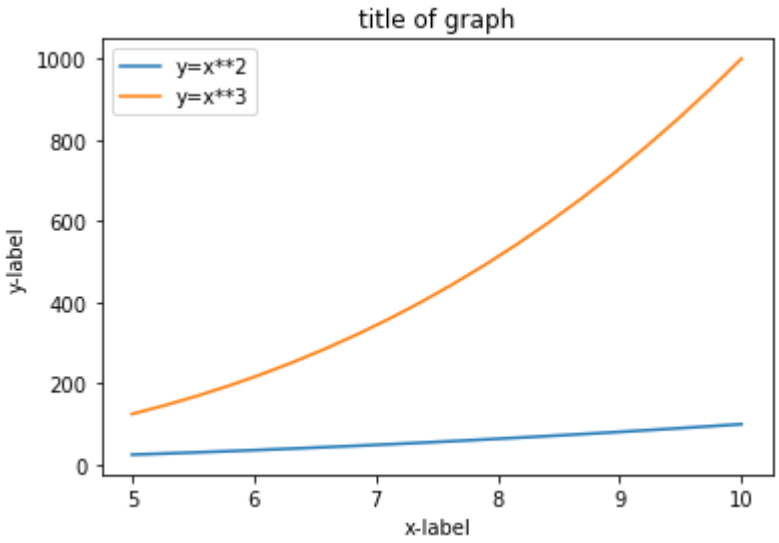
In [64]:
```
fig=plt.figure()
axes1=fig.add_axes([0.1,0.1,0.8,0.8])
axes2=fig.add_axes([0.2,0.5,0.4,0.3])

axes1.plot(x,y,"r")
axes2.plot(y,x,"g")
```

Out[64]: [<matplotlib.lines.Line2D at 0x175f31c25e0>]



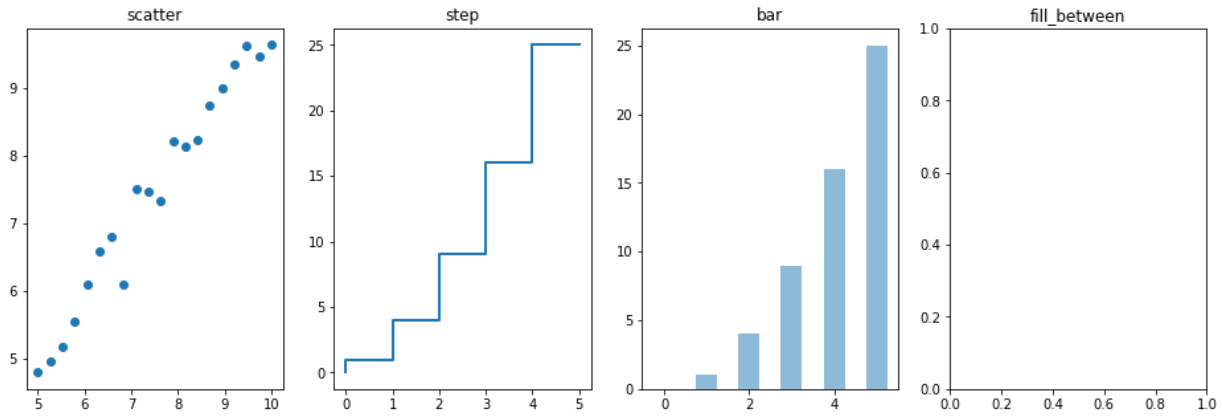
In [72]:
```

fig,axes=plt.subplots()
axes.set_xlabel("x-label")
axes.set_ylabel("y-label")

axes.set_title("title of graph")

axes.plot(x,x**2)
axes.plot(x,x**3)

axes.legend(["y=x**2","y=x**3"],loc=2)
```

Out[72]: <matplotlib.legend.Legend at 0x175f4c7b8b0>

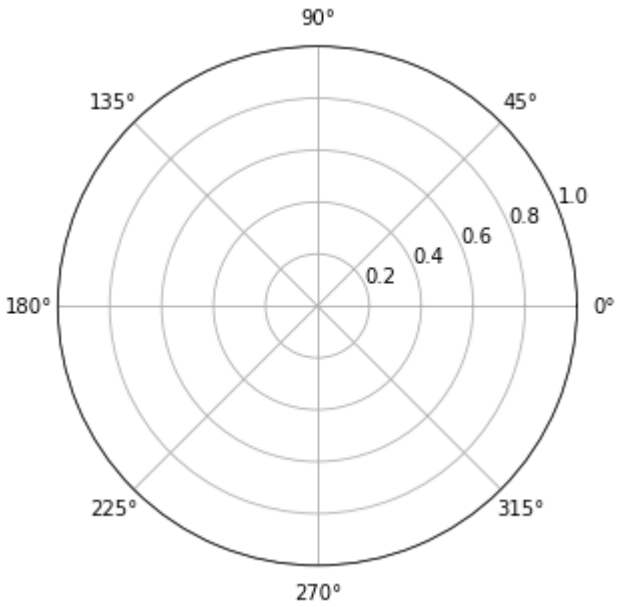


In [96]:
```
#2d graphics
n=np.array([0,1,2,3,4,5])
fig,axes=plt.subplots(1,4,figsize=(16,5))

axes[0].set_title("scatter")
axes[0].scatter(x,x+0.25*np.random.randn(len(x)))

axes[1].set_title("step")
axes[1].step(n,n**2,lw=2)

axes[2].set_title("bar")
axes[2].bar(n,n**2,align="center",width=0.5,alpha=0.5)

axes[3].set_title("fill_between")

```

Out[96]: Text(0.5, 1.0, 'fill_between')



In [97]:
```
#radar chart
fig=plt.figure(figsize=(6,6))
ax=fig.add_axes([0.0,0.0,.6,.6],polar=True)
```



In [108]:
```
#histogram
n=np.random.rand(100)
fig,axes=plt.subplots(1,2,figsize=(12,4))
axes[0].set_title("default_histogram")
axes[0].hist(n)


axes[1].set_title("cumulative detailed histogram")
axes[1].hist(n,cumulative=True,bins=50)
```

Out[108]:
```
(array([  2.,   4.,   5.,   5.,   8.,   8.,  12.,  15.,  17.,  18.,  21.,
         22.,  25.,  26.,  27.,  28.,  29.,  35.,  38.,  40.,  43.,  45.,
         46.,  49.,  50.,  50.,  54.,  59.,  60.,  62.,  64.,  66.,  69.,
         73.,  76.,  76.,  82.,  84.,  84.,  86.,  87.,  87.,  88.,  91.,
         92.,  94.,  95.,  96.,  96., 100.]),
 array([1.45339038e-06, 1.99524727e-02, 3.99034920e-02, 5.98545113e-02,
        7.98055305e-02, 9.97565498e-02, 1.19707569e-01, 1.39658588e-01,
        1.59609608e-01, 1.79560627e-01, 1.99511646e-01, 2.19462666e-01,
        2.39413685e-01, 2.59364704e-01, 2.79315723e-01, 2.99266743e-01,
        3.19217762e-01, 3.39168781e-01, 3.59119801e-01, 3.79070820e-01,
        3.99021839e-01, 4.18972858e-01, 4.38923878e-01, 4.58874897e-01,
        4.78825916e-01, 4.98776936e-01, 5.18727955e-01, 5.38678974e-01,
        5.58629993e-01, 5.78581013e-01, 5.98532032e-01, 6.18483051e-01,
        6.38434071e-01, 6.58385090e-01, 6.78336109e-01, 6.98287128e-01,
        7.18238148e-01, 7.38189167e-01, 7.58140186e-01, 7.78091206e-01,
        7.98042225e-01, 8.17993244e-01, 8.37944263e-01, 8.57895283e-01,
        8.77846302e-01, 8.97797321e-01, 9.17748341e-01, 9.37699360e-01,
        9.57650379e-01, 9.77601398e-01, 9.97552418e-01]),
 <BarContainer object of 50 artists>)
```