Linear equation with numpy

x + 2y = 3

-x + y = 15

In [15]:
```
import numpy as p
```

In [20]:
```
x = p.array([[1,2],[-1,1]])
x
```

Out[20]:
```
array([[ 1,  2],
       [-1,  1]])
```

In [21]:
```
y = p.array([3,15])
y
```

Out[21]:
```
array([ 3, 15])
```

In [22]:
```
ans = p.linalg.solve(x,y)
ans
```

Out[22]:
```
array([-9.,  6.])
```

x + y + z = 10

2x + y + z = 12

x + 3y - z = 6

In [24]:
```
a = p.array([[1,1,1],[2,1,1],[1,3,-1]])
a
```

Out[24]:
```
array([[ 1,  1,  1],
       [ 2,  1,  1],
       [ 1,  3, -1]])
```

In [ ]:
```

```

In [27]:
```
b = p.array([10,12,6])
b
```

Out[27]:
```
array([10, 12,  6])
```

In [28]:
```
t = p.linalg.solve(a,b)
t
```

Out[28]:
```
array([2., 3., 5.])
```

x +y -z = 20

x +y -2z = 30

x -2y + z = -1

In [40]:
```
d = p.array([
    [1,1,1],[1,1,2],[1,-2,1]
])
d
```

Out[40]:
```
array([[ 1,  1,  1],
       [ 1,  1,  2],
       [ 1, -2,  1]])
```

In [41]:
```
o = p.array([20,30,-1])
o
```

Out[41]:
```
array([20, 30, -1])
```

In [42]:
```
ans = p.linalg.solve(d,o)
ans
```

Out[42]:
```
array([ 3.,  7., 10.])
```

In [47]:
```
rd = p.arange(101)
rd
```

Out[47]:
```
array([  0,   1,   2,   3,   4,   5,   6,   7,   8,   9,  10,  11,  12,
        13,  14,  15,  16,  17,  18,  19,  20,  21,  22,  23,  24,  25,
        26,  27,  28,  29,  30,  31,  32,  33,  34,  35,  36,  37,  38,
        39,  40,  41,  42,  43,  44,  45,  46,  47,  48,  49,  50,  51,
        52,  53,  54,  55,  56,  57,  58,  59,  60,  61,  62,  63,  64,
        65,  66,  67,  68,  69,  70,  71,  72,  73,  74,  75,  76,  77,
        78,  79,  80,  81,  82,  83,  84,  85,  86,  87,  88,  89,  90,
        91,  92,  93,  94,  95,  96,  97,  98,  99, 100])
```

In [48]:
```
p.save('test.npy',rd)
```

In [49]:
```
p.load('test.npy')
```

Out[49]:
```
array([  0,   1,   2,   3,   4,   5,   6,   7,   8,   9,  10,  11,  12,
        13,  14,  15,  16,  17,  18,  19,  20,  21,  22,  23,  24,  25,
        26,  27,  28,  29,  30,  31,  32,  33,  34,  35,  36,  37,  38,
        39,  40,  41,  42,  43,  44,  45,  46,  47,  48,  49,  50,  51,
        52,  53,  54,  55,  56,  57,  58,  59,  60,  61,  62,  63,  64,
        65,  66,  67,  68,  69,  70,  71,  72,  73,  74,  75,  76,  77,
        78,  79,  80,  81,  82,  83,  84,  85,  86,  87,  88,  89,  90,
        91,  92,  93,  94,  95,  96,  97,  98,  99, 100])
```

In [57]:
```
import matplotlib.pyplot as plt
```

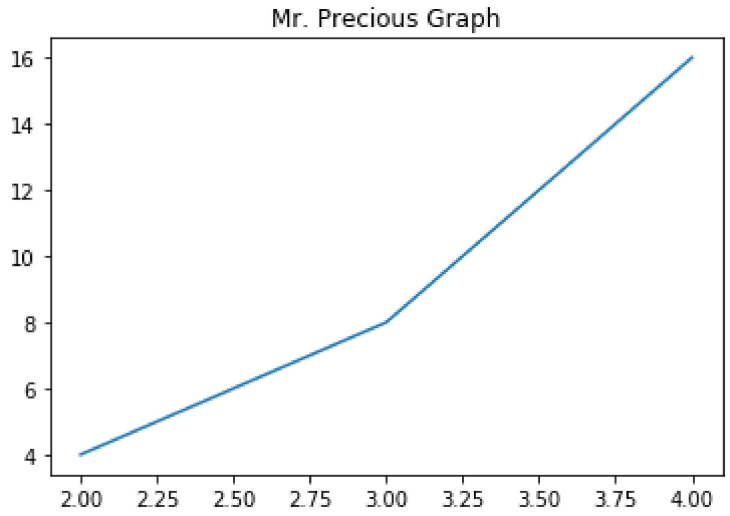
In [58]:
```
%matplotlib inline
```

In [59]:
```
x = p.array([2,3,4])
y = pow(2,x)
```

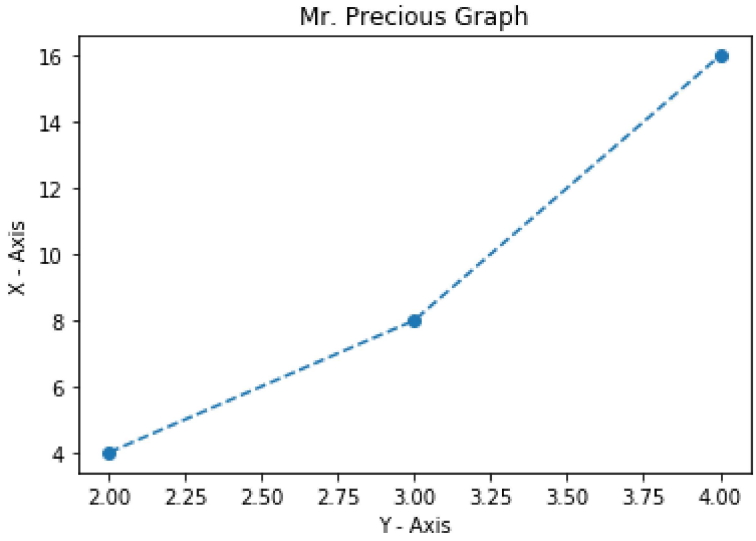
In [62]:
```
y,x
```

Out[62]:
```
(array([ 4,  8, 16], dtype=int32), array([2, 3, 4]))
```

In [64]:
```
plt.plot(x,y)
plt.title("Mr. Precious Graph")
plt.show()
```



In [74]:
```
plt.plot(x,y,"--o" )
plt.title("Mr. Precious Graph")
plt.ylabel("X - Axis")
plt.xlabel("Y - Axis")
plt.show()
```

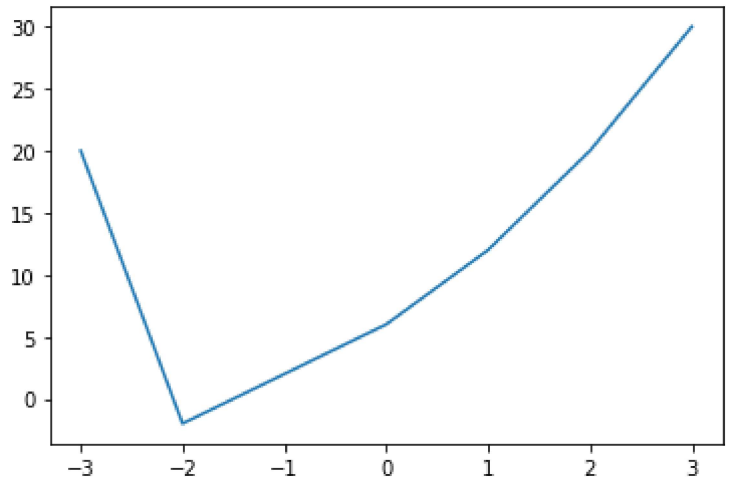


In [84]:
```
x = p.array([-3,-2,-1,0,1,2,3])
y = p.array([20,-2,2,6,12,20,30])
```

In [85]:
```
import matplotlib.pyplot as pltt
```

In [86]:
```
%matplotlib inline
```

In [87]:
```
pltt.plot(x,y)
pltt.show()
```



In [ ]:
```

```