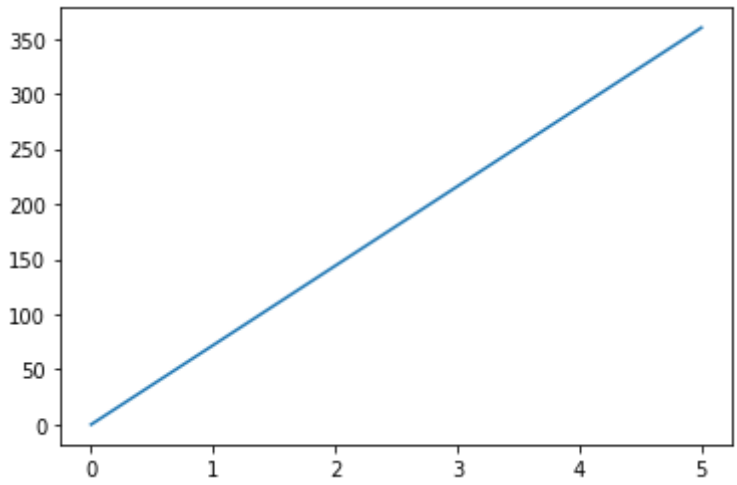
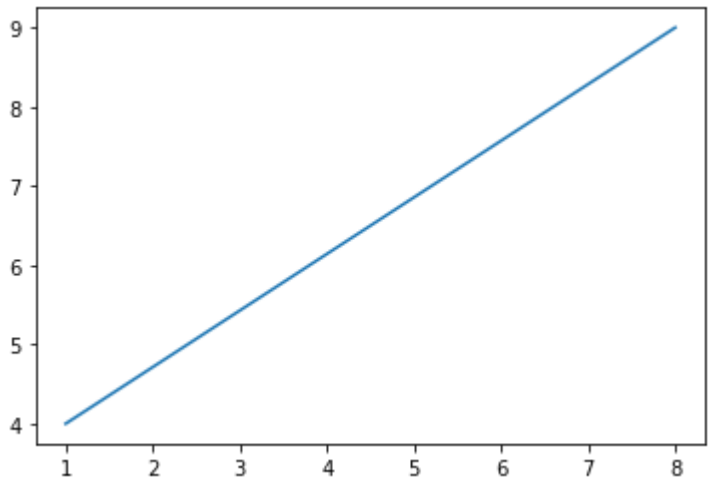
```
#pyplot
import matplotlib.pyplot as plt
import numpy as np

xpoints = np.array([0, 5])
ypoints = np.array([0, 360])

plt.plot(xpoints, ypoints)
plt.show()
```

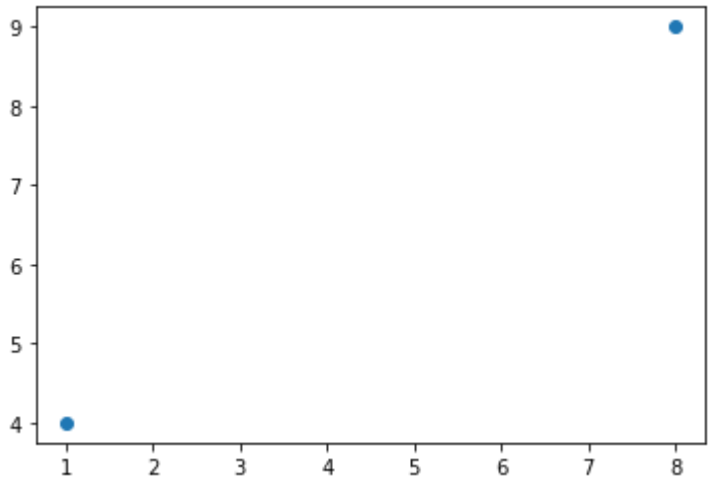



```
#plotting
import matplotlib.pyplot as plt
import numpy as np

xpoints = np.array([1, 8])
ypoints = np.array([4, 9])

plt.plot(xpoints, ypoints)
plt.show()
```

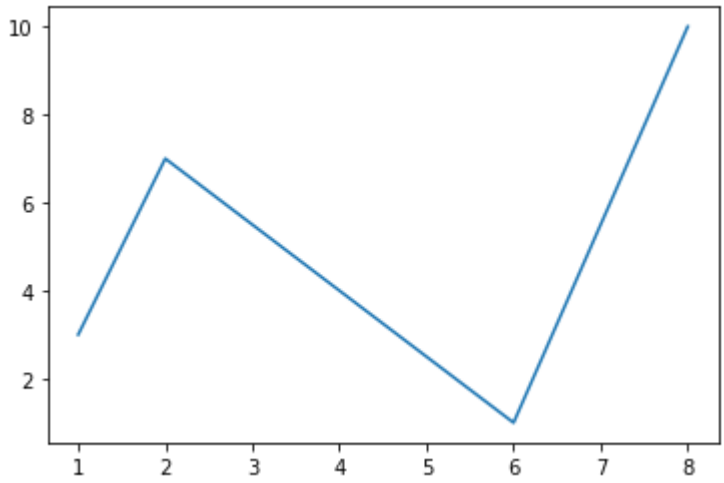



```
import matplotlib.pyplot as plt
import numpy as np

xpoints = np.array([1, 8])
```

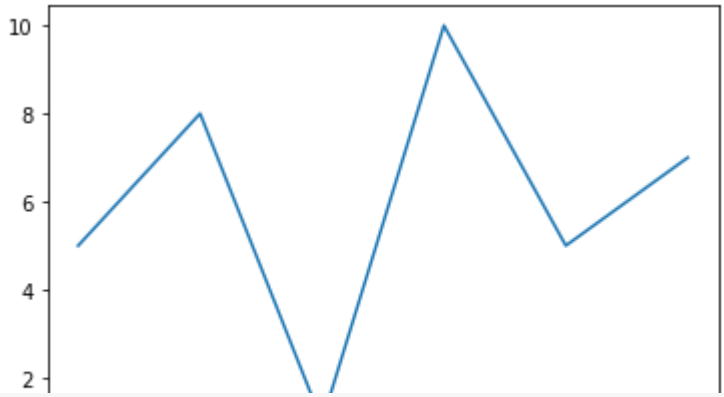
```
ypoints = np.array([4, 9])

plt.plot(xpoints, ypoints, 'o')
plt.show()
```



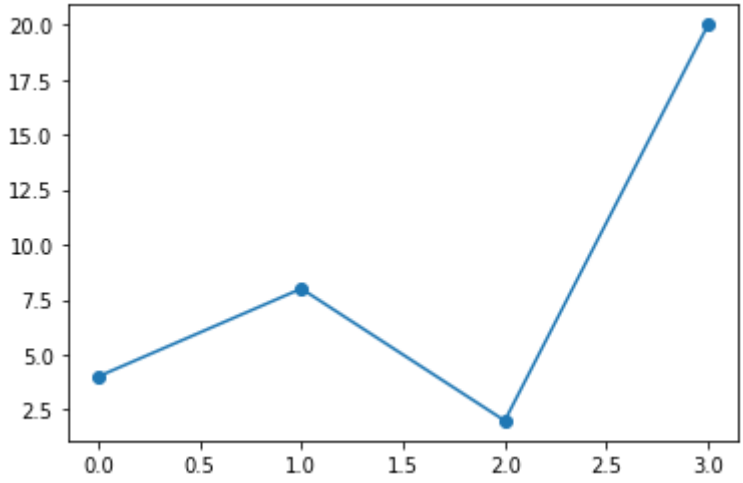

```
import matplotlib.pyplot as plt
import numpy as np

xpoints = np.array([1, 2, 6, 8])
ypoints = np.array([3, 7, 1, 10])

plt.plot(xpoints, ypoints)
plt.show()
```



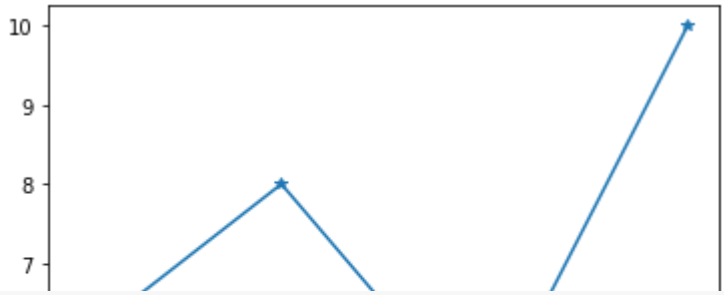

```
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([5, 8, 1, 10, 5, 7])

plt.plot(ypoints)
plt.show()
```



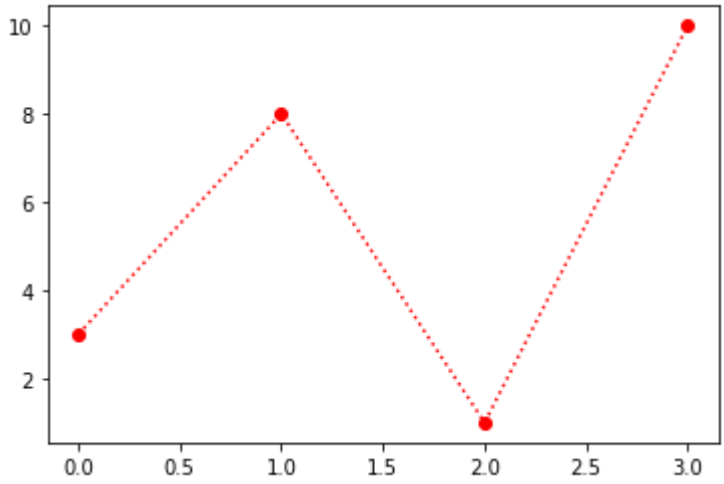

```
#markers
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([4, 8, 2, 20])

plt.plot(ypoints, marker = 'o')
plt.show()
```



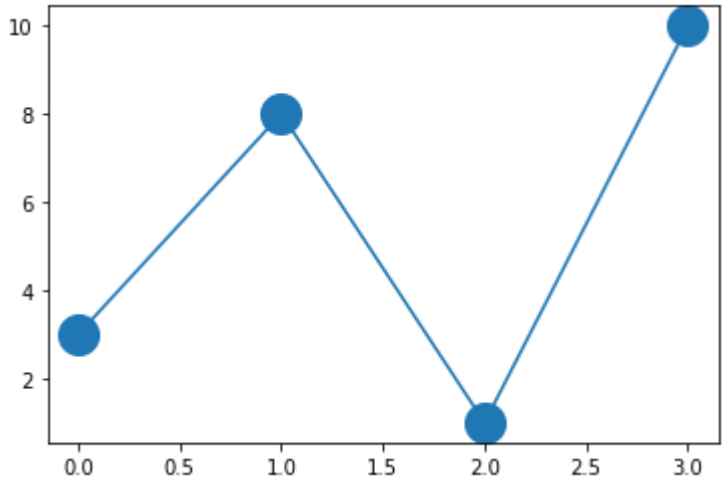

```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([6, 8, 5, 10])
plt.plot(ypoints, marker = '*')
plt.show()

sys.stdout.flush()
```



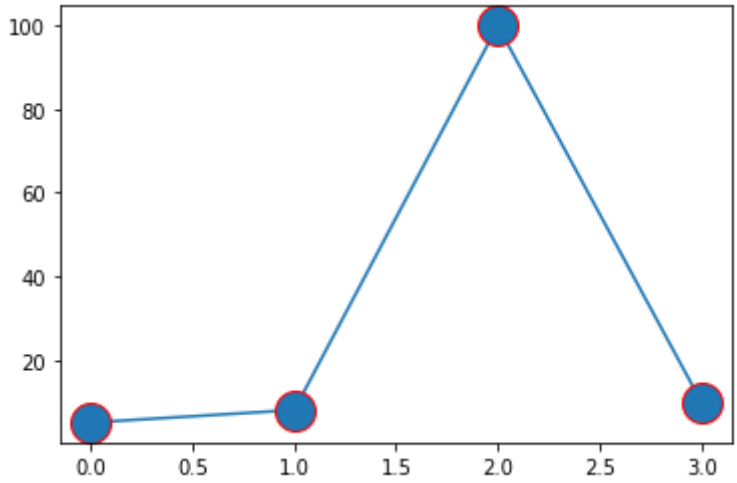

```
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([3, 8, 1, 10])

plt.plot(ypoints, 'o:r')
plt.show()
```



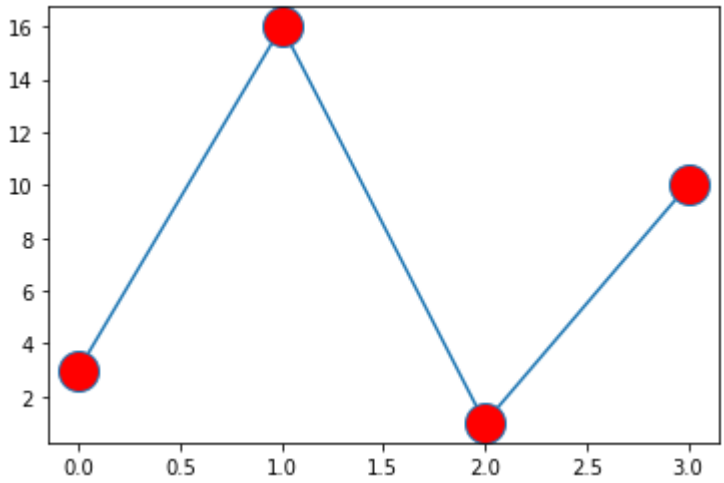

```
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([3, 8, 1, 10])

plt.plot(ypoints, marker = 'o', ms = 20)
plt.show()
```



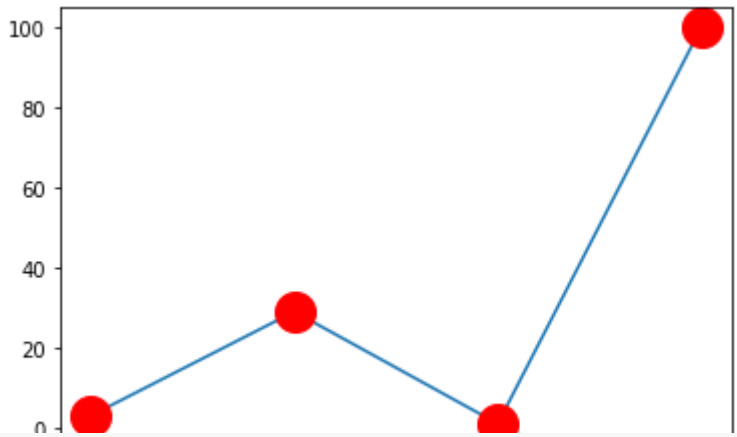
```
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([5, 8, 100, 10])

plt.plot(ypoints, marker = 'o', ms = 20, mec = 'r')
plt.show()
```



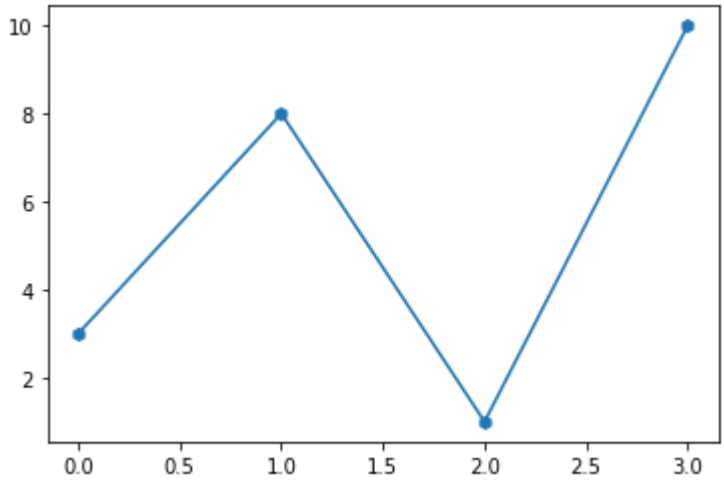

```
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([3, 16, 1, 10])

plt.plot(ypoints, marker = 'o', ms = 20, mfc = 'r')
plt.show()
```



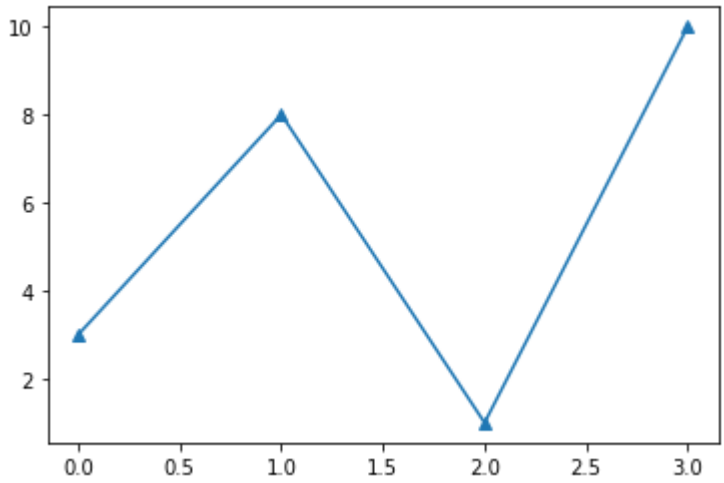

```
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([3, 29, 1, 100])

plt.plot(ypoints, marker = 'o', ms = 20, mec = 'r', mfc = 'r')
plt.show()
```



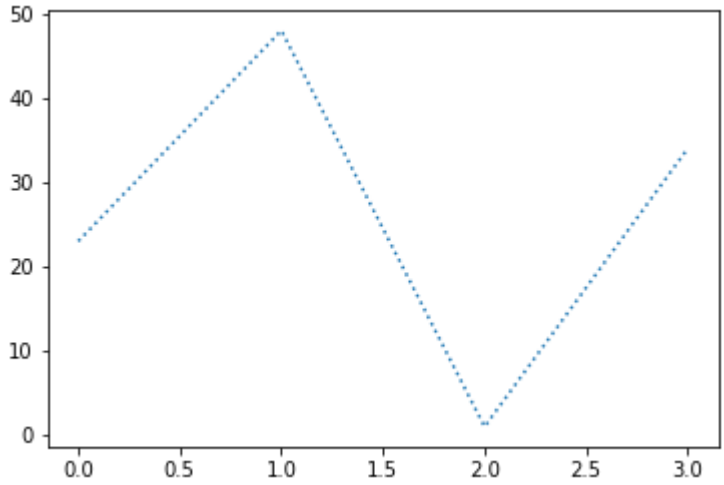

```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([3, 8, 1, 10])

plt.plot(ypoints, marker = 'h')
plt.show()

sys.stdout.flush()
```



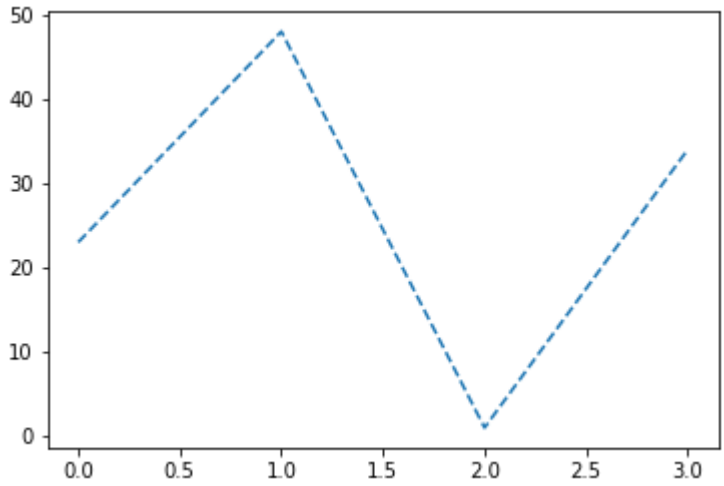

```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([3, 8, 1, 10])

plt.plot(ypoints, marker = '^')
plt.show()
sys.stdout.flush()
```



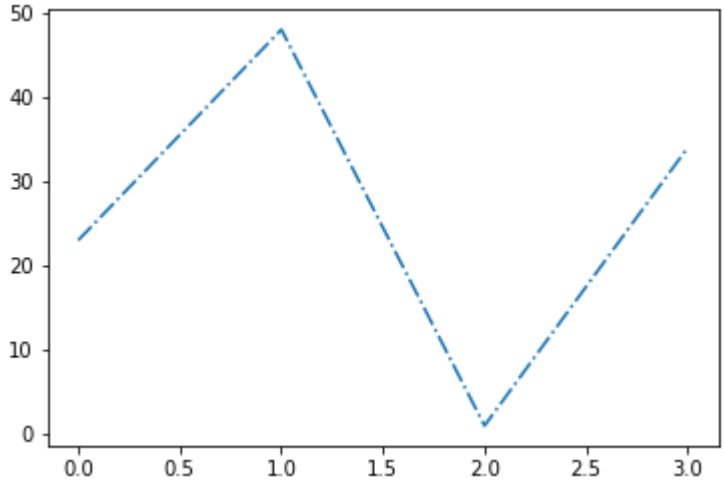

```
#line
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([23, 48, 1, 34])

plt.plot(ypoints, linestyle = 'dotted')
plt.show()
```



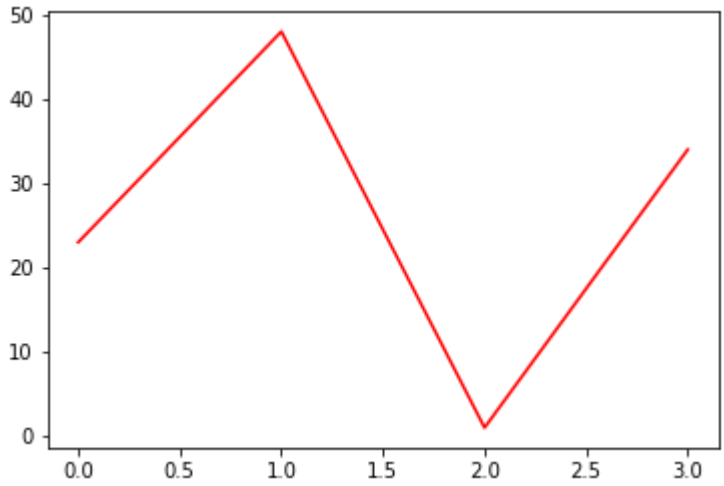

```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([23, 48, 1, 34])

plt.plot(ypoints, linestyle = 'dashed')
plt.show()
sys.stdout.flush()
```



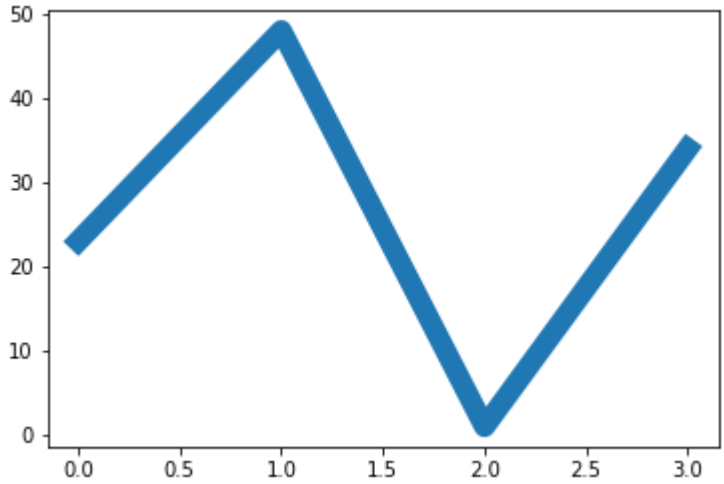

```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([23, 48, 1, 34])

plt.plot(ypoints, ls = '-.')
plt.show()

sys.stdout.flush()
```



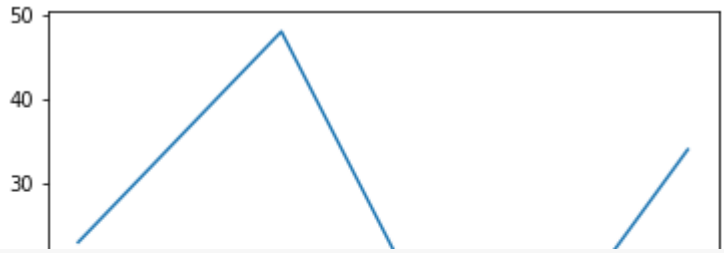

```
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([23, 48, 1, 34])

plt.plot(ypoints, color = 'r')
plt.show()
```



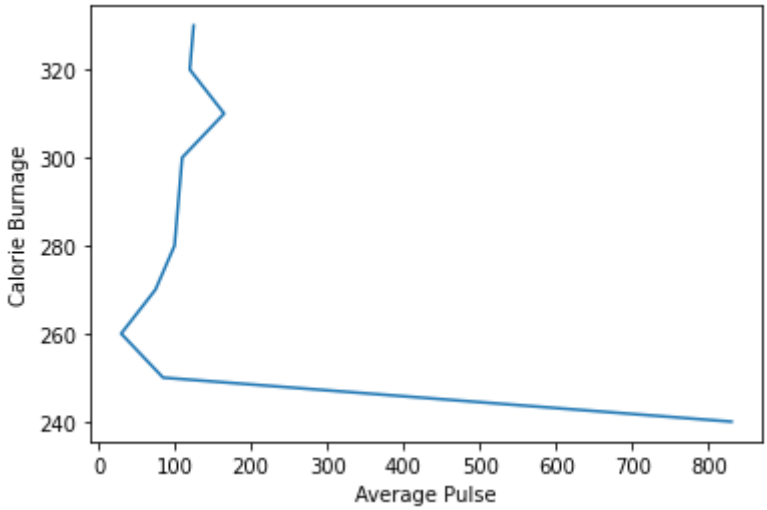

```
import matplotlib.pyplot as plt
import numpy as np

ypoints = np.array([23, 48, 1, 34])

plt.plot(ypoints, linewidth = '10.5')
plt.show()
```



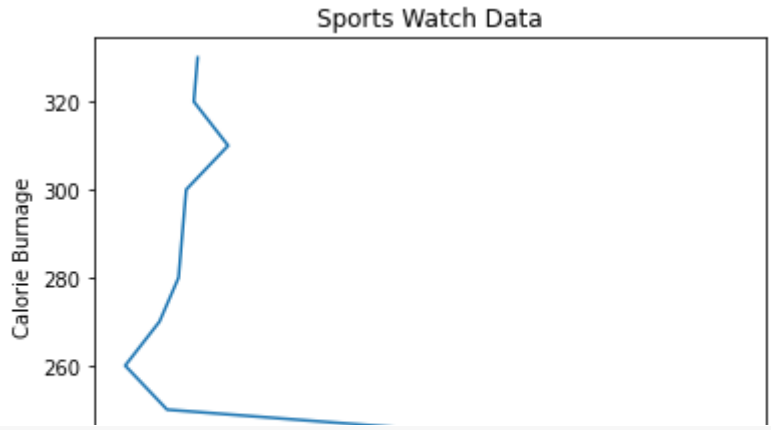

```
import matplotlib.pyplot as plt
import numpy as np

y1 = np.array([23, 48, 1, 34])
y2 = np.array([6, 2, 7, 11])

plt.plot(y1)
plt.plot(y2)

plt.show()
```



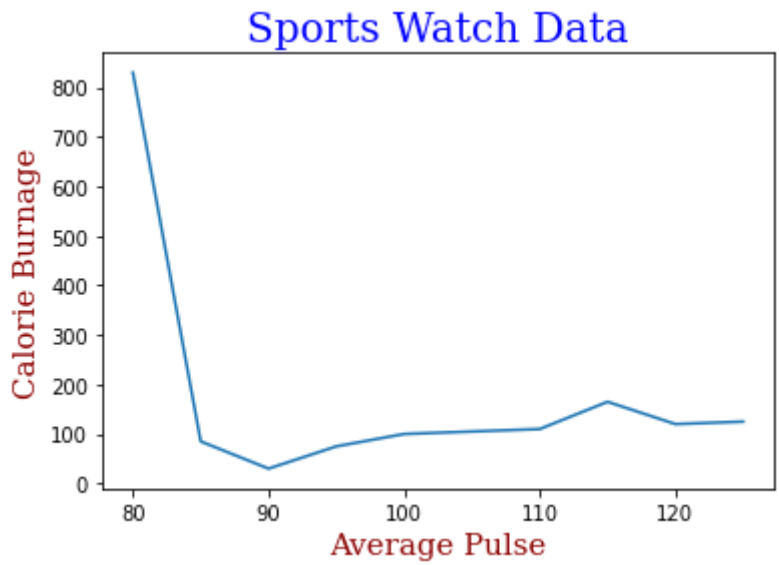

```
#labels
import numpy as np
import matplotlib.pyplot as plt

x = np.array([830, 85, 30, 75, 100, 105, 110, 165, 120, 125])
y = np.array([240, 250, 260, 270, 280, 290, 300, 310, 320, 330])

plt.plot(x, y)

plt.xlabel("Average Pulse")
plt.ylabel("Calorie Burnage")

plt.show()
```




```
import numpy as np
import matplotlib.pyplot as plt

x = np.array([830, 85, 30, 75, 100, 105, 110, 165, 120, 125])
y = np.array([240, 250, 260, 270, 280, 290, 300, 310, 320, 330])

plt.plot(x, y)

plt.title("Sports Watch Data")
plt.xlabel("Average Pulse")
plt.ylabel("Calorie Burnage")

plt.show()
```

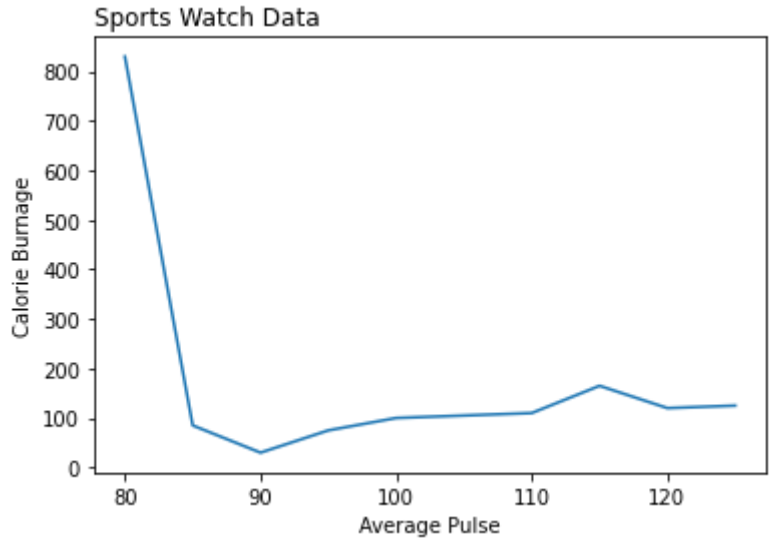



```
import numpy as np
import matplotlib.pyplot as plt

x = np.array([80, 85, 90, 95, 100, 105, 110, 115, 120, 125])
y = np.array([830, 85, 30, 75, 100, 105, 110, 165, 120, 125])

font1 = {'family':'serif','color':'blue','size':20}
font2 = {'family':'serif','color':'darkred','size':15}

plt.title("Sports Watch Data", fontdict = font1)
plt.xlabel("Average Pulse", fontdict = font2)
plt.ylabel("Calorie Burnage", fontdict = font2)

plt.plot(x, y)
plt.show()
```

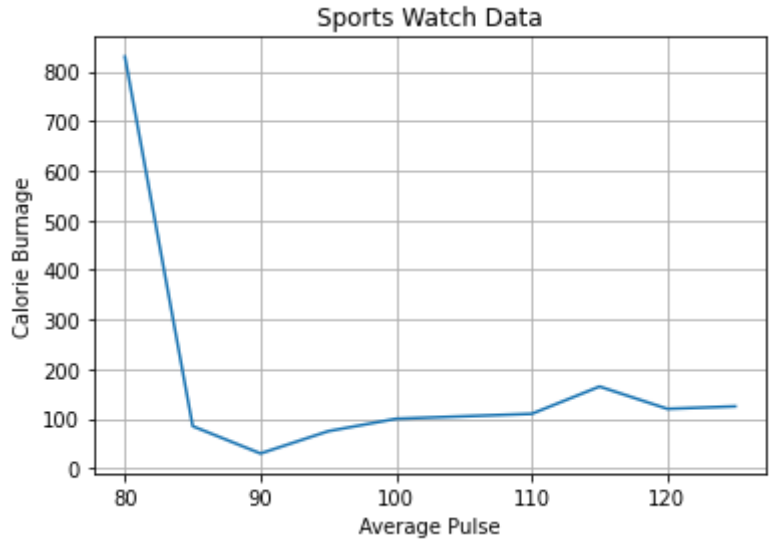



```
import numpy as np
import matplotlib.pyplot as plt

x = np.array([80, 85, 90, 95, 100, 105, 110, 115, 120, 125])
y = np.array([830, 85, 30, 75, 100, 105, 110, 165, 120, 125])

plt.title("Sports Watch Data", loc = 'left')
plt.xlabel("Average Pulse")
plt.ylabel("Calorie Burnage")
```

```
plt.plot(x, y)
plt.show()
```

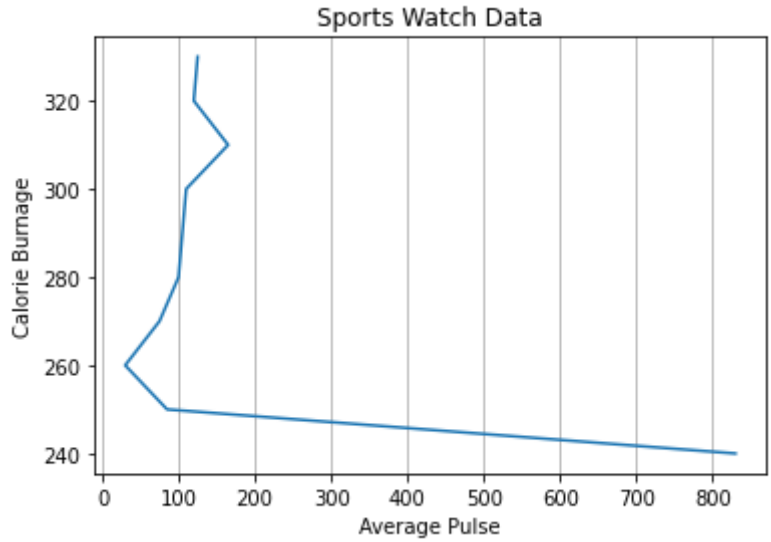



```
#grid
import numpy as np
import matplotlib.pyplot as plt

x = np.array([80, 85, 90, 95, 100, 105, 110, 115, 120, 125])
y = np.array([830, 85, 30, 75, 100, 105, 110, 165, 120, 125])

plt.title("Sports Watch Data")
plt.xlabel("Average Pulse")
plt.ylabel("Calorie Burnage")

plt.plot(x, y)

plt.grid()

plt.show()
```

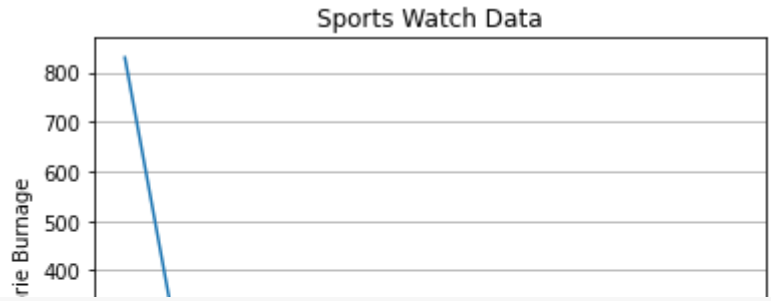



```
import numpy as np
```

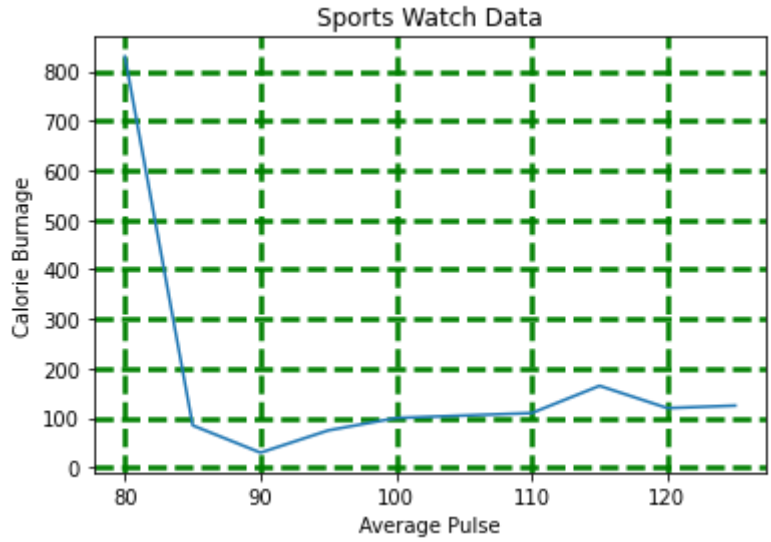
```
import matplotlib.pyplot as plt

x = np.array([830, 85, 30, 75, 100, 105, 110, 165, 120, 125])
y = np.array([240, 250, 260, 270, 280, 290, 300, 310, 320, 330])

plt.title("Sports Watch Data")
plt.xlabel("Average Pulse")
plt.ylabel("Calorie Burnage")

plt.plot(x, y)

plt.grid(axis = 'x')

plt.show()
```




```
import numpy as np
import matplotlib.pyplot as plt

x = np.array([80, 85, 90, 95, 100, 105, 110, 115, 120, 125])
y = np.array([830, 85, 30, 75, 100, 105, 110, 165, 120, 125])

plt.title("Sports Watch Data")
plt.xlabel("Average Pulse")
plt.ylabel("Calorie Burnage")

plt.plot(x, y)

plt.grid(axis = 'y')

plt.show()
```

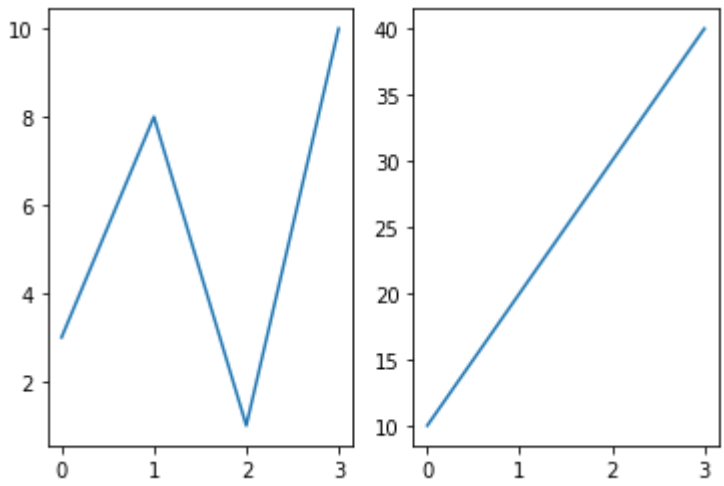



```
import numpy as np
import matplotlib.pyplot as plt

x = np.array([80, 85, 90, 95, 100, 105, 110, 115, 120, 125])
y = np.array([830, 85, 30, 75, 100, 105, 110, 165, 120, 125])

plt.title("Sports Watch Data")
plt.xlabel("Average Pulse")
plt.ylabel("Calorie Burnage")

plt.plot(x, y)

plt.grid(color = 'green', linestyle = '--', linewidth = 2.5)

plt.show()
```

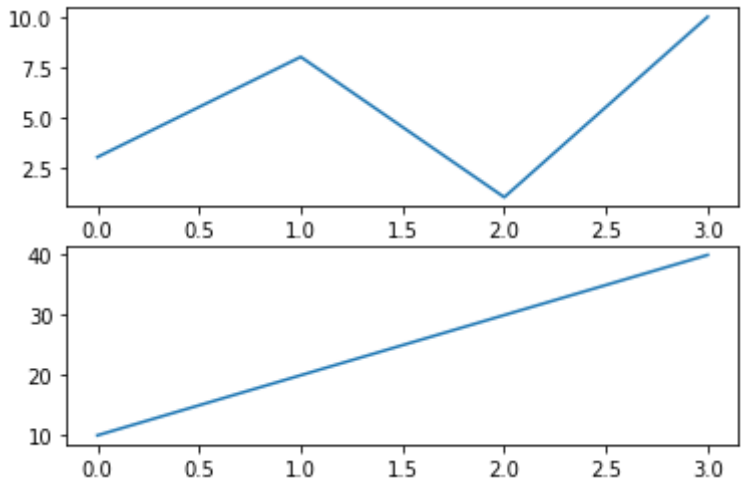



```
#subplot
import matplotlib.pyplot as plt
import numpy as np

#plot 1:
x = np.array([0, 1, 2, 3])
y = np.array([3, 8, 1, 10])

plt.subplot(1, 2, 1)
plt.plot(x,y)

#plot 2:
x = np.array([0, 1, 2, 3])
```

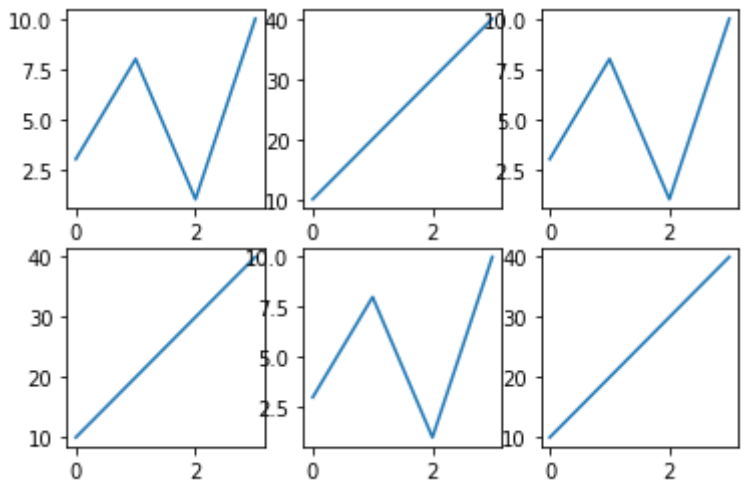
```
y = np.array([10, 20, 30, 40])

plt.subplot(1, 2, 2)
plt.plot(x,y)

plt.show()
```



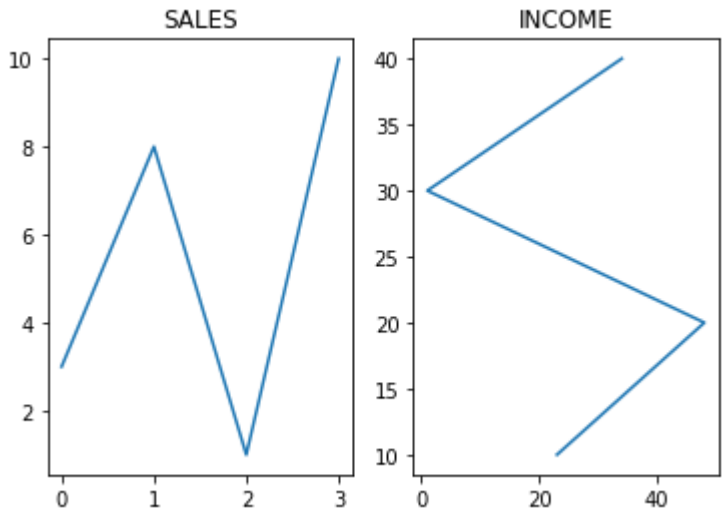

```
import matplotlib.pyplot as plt
import numpy as np

#plot 1:
x = np.array([0, 1, 2, 3])
y = np.array([3, 8, 1, 10])

plt.subplot(2, 1, 1)
plt.plot(x,y)

#plot 2:
x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])

plt.subplot(2, 1, 2)
plt.plot(x,y)

plt.show()
```



```
import matplotlib.pyplot as plt
import numpy as np

x = np.array([0, 1, 2, 3])
y = np.array([3, 8, 1, 10])

plt.subplot(2, 3, 1)
plt.plot(x,y)

x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])

plt.subplot(2, 3, 2)
plt.plot(x,y)

x = np.array([0, 1, 2, 3])
y = np.array([3, 8, 1, 10])

plt.subplot(2, 3, 3)
plt.plot(x,y)

x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])

plt.subplot(2, 3, 4)
plt.plot(x,y)

x = np.array([0, 1, 2, 3])
y = np.array([3, 8, 1, 10])

plt.subplot(2, 3, 5)
plt.plot(x,y)

x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])

plt.subplot(2, 3, 6)
plt.plot(x,y)

plt.show()
```

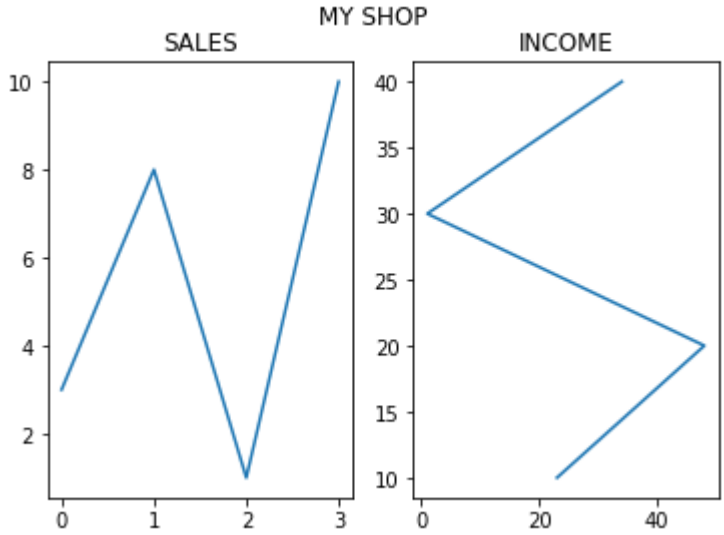


```
import matplotlib.pyplot as plt
import numpy as np

#plot 1:
x = np.array([0, 1, 2, 3])
y = np.array([3, 8, 1, 10])

plt.subplot(1, 2, 1)
plt.plot(x,y)
plt.title("SALES")

#plot 2:
x = np.array([23, 48, 1, 34])
y = np.array([10, 20, 30, 40])

plt.subplot(1, 2, 2)
plt.plot(x,y)
plt.title("INCOME")

plt.show()
```

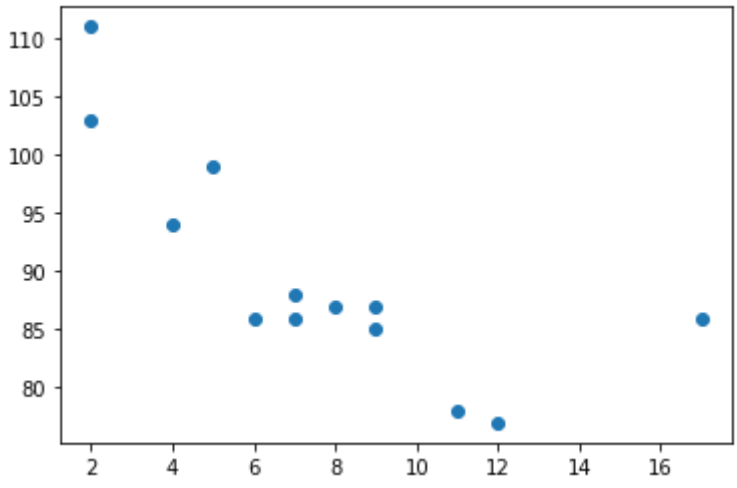



```
import matplotlib.pyplot as plt
import numpy as np

#plot 1:
x = np.array([0, 1, 2, 3])
y = np.array([3, 8, 1, 10])

plt.subplot(1, 2, 1)
plt.plot(x,y)
plt.title("SALES")

#plot 2:
x = np.array([23, 48, 1, 34])
y = np.array([10, 20, 30, 40])

plt.subplot(1, 2, 2)
plt.plot(x,y)
```

```
plt.title("INCOME")

plt.suptitle("MY SHOP")
plt.show()
```

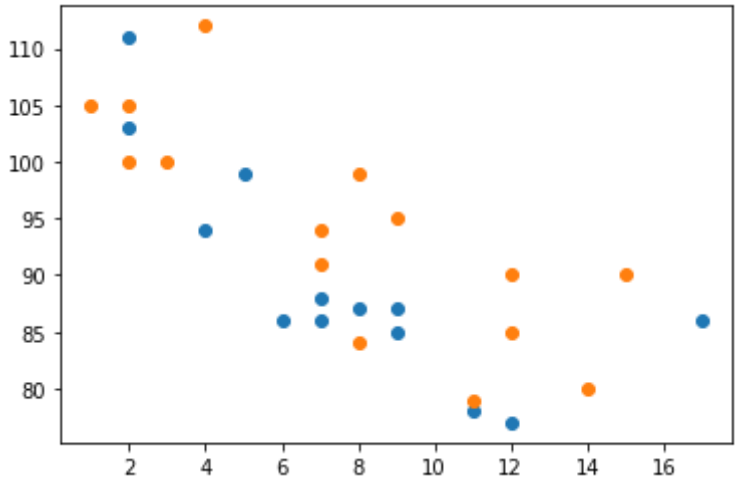



```
#scatter
import matplotlib.pyplot as plt
import numpy as np

x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])

plt.scatter(x, y)
plt.show()
```

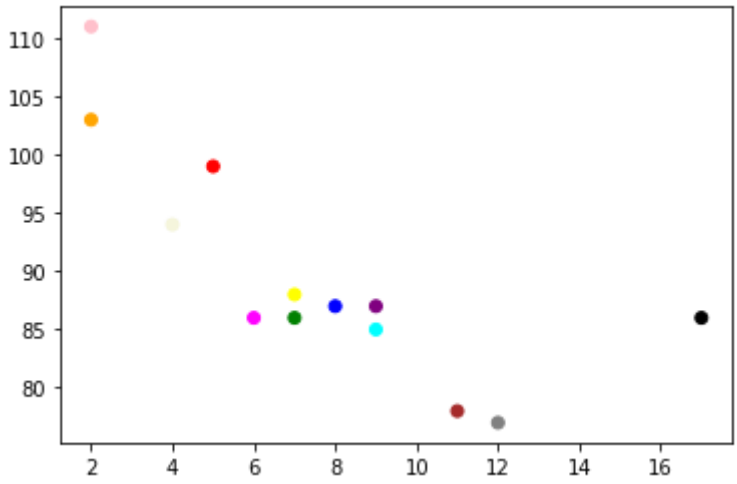



```
import matplotlib.pyplot as plt
import numpy as np

#day one, the age and speed of 13 cars:
x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
plt.scatter(x, y)
```

```
#day two, the age and speed of 15 cars:
x = np.array([2,2,8,1,15,8,12,9,7,3,11,4,7,14,12])
y = np.array([100,105,84,105,90,99,90,95,94,100,79,112,91,80,85])
plt.scatter(x, y)

plt.show()
```

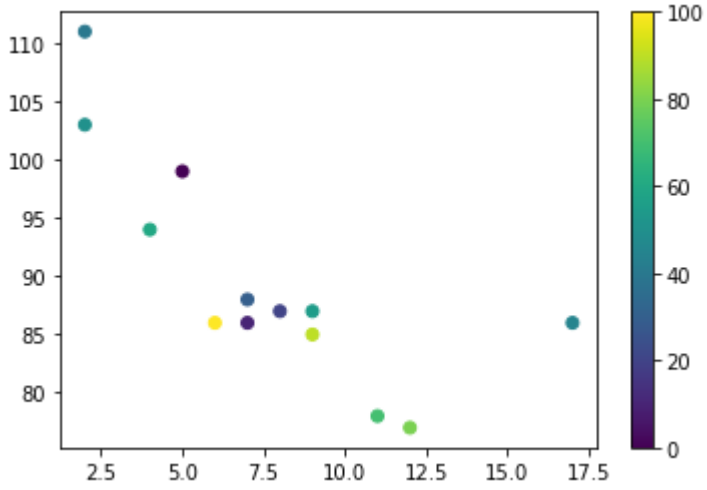



```
import matplotlib.pyplot as plt
import numpy as np

x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
colors = np.array(["red","green","blue","yellow","pink","black","orange","purple","beige",

plt.scatter(x, y, c=colors)

plt.show()
```

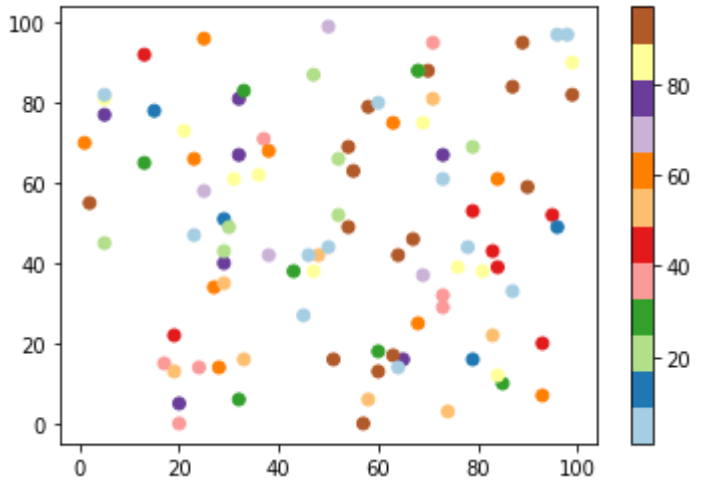



```
import matplotlib.pyplot as plt
import numpy as np

x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
colors = np.array([0, 10, 20, 30, 40, 45, 50, 55, 60, 70, 80, 90, 100])

plt.scatter(x, y, c=colors, cmap='viridis')
```

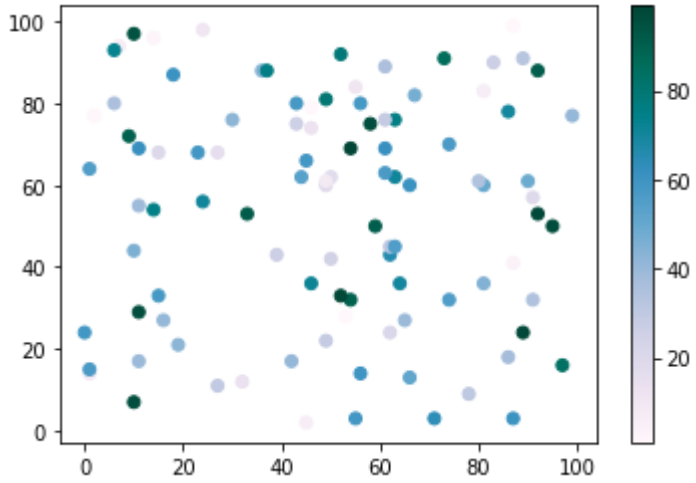
```
plt.colorbar()

plt.show()
```



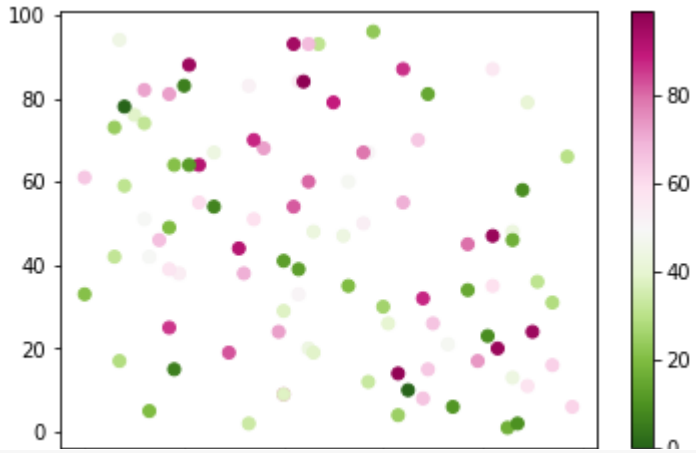

```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

x = np.random.randint(100, size=(100))
y = np.random.randint(100, size=(100))
colors = np.random.randint(100, size=(100))

plt.scatter(x, y, c=colors, cmap='Paired')

plt.colorbar()

plt.show()
sys.stdout.flush()
```



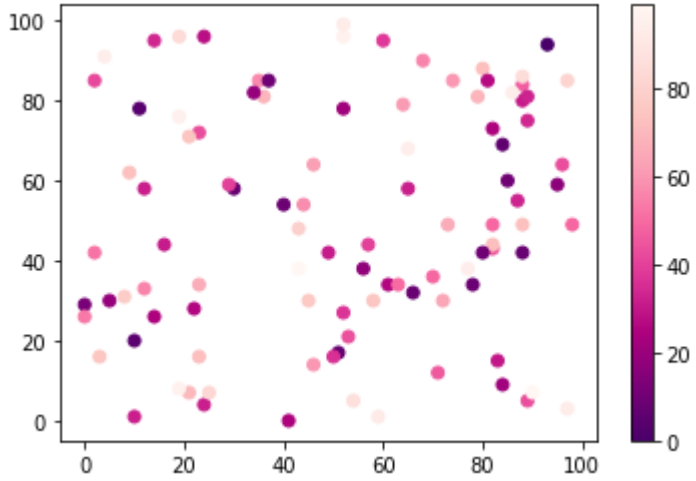
```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

x = np.random.randint(100, size=(100))
y = np.random.randint(100, size=(100))
colors = np.random.randint(100, size=(100))

plt.scatter(x, y, c=colors, cmap='PuBuGn')

plt.colorbar()

plt.show()
sys.stdout.flush()
```




```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

x = np.random.randint(100, size=(100))
y = np.random.randint(100, size=(100))
colors = np.random.randint(100, size=(100))

plt.scatter(x, y, c=colors, cmap='PiYG_r')

plt.colorbar()

plt.show()
sys.stdout.flush()
```

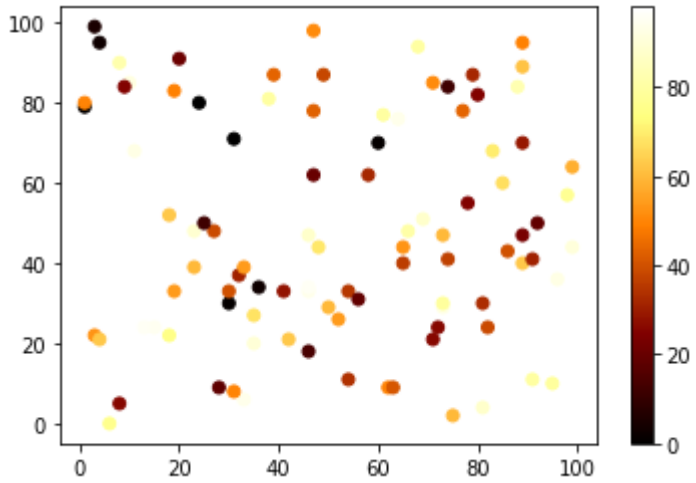



```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
import numpy as np

x = np.random.randint(100, size=(100))
y = np.random.randint(100, size=(100))
colors = np.random.randint(100, size=(100))

plt.scatter(x, y, c=colors, cmap='RdPu_r')

plt.colorbar()

plt.show()

sys.stdout.flush()
```

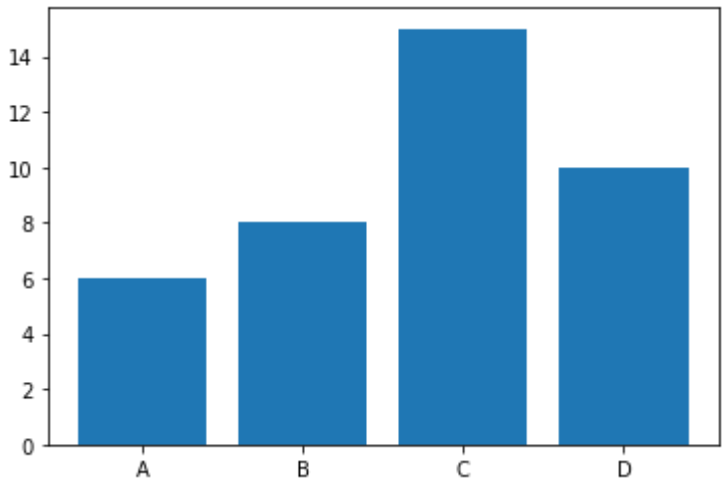



```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
```

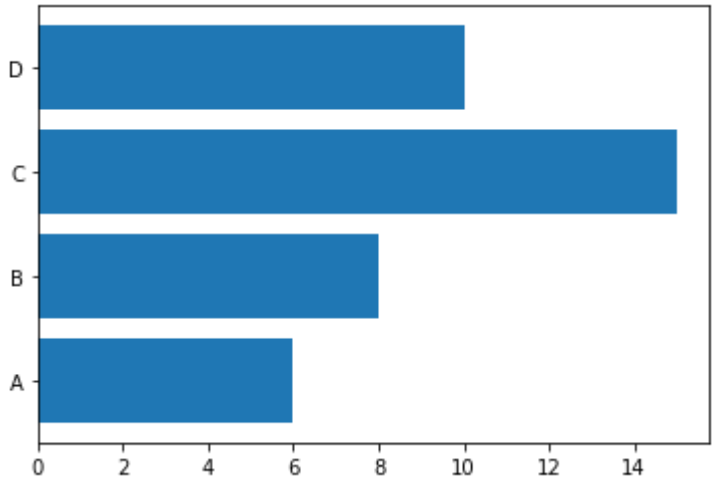
```
import numpy as np

x = np.random.randint(100, size=(100))
y = np.random.randint(100, size=(100))
colors = np.random.randint(100, size=(100))

plt.scatter(x, y, c=colors, cmap='afmhot')

plt.colorbar()

plt.show()
sys.stdout.flush()
```



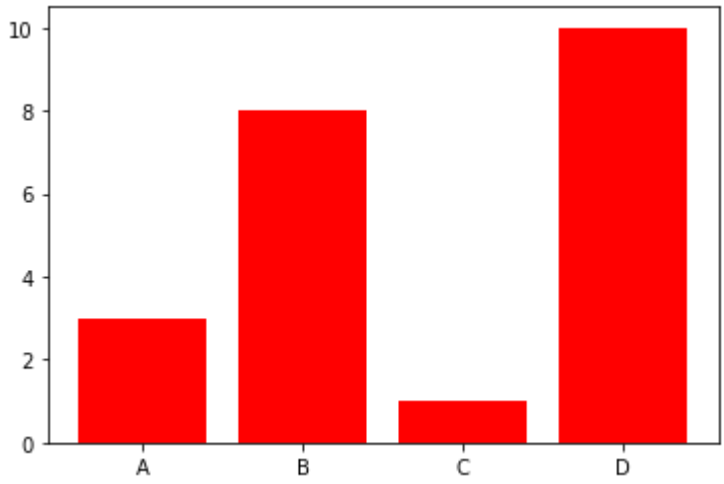

```
#bars
import matplotlib.pyplot as plt
import numpy as np

x = np.array(["A", "B", "C", "D"])
y = np.array([6, 8, 15, 10])

plt.bar(x,y)
plt.show()
```



```
import matplotlib.pyplot as plt
import numpy as np

x = np.array(["A", "B", "C", "D"])
y = np.array([6, 8, 15, 10])

plt.barh(x, y)
plt.show()
```

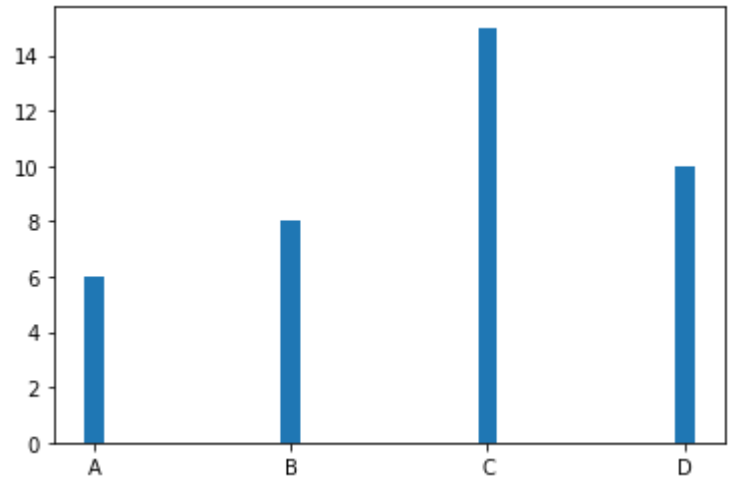



```
import matplotlib.pyplot as plt
import numpy as np

x = np.array(["A", "B", "C", "D"])
y = np.array([3, 8, 1, 10])

plt.bar(x, y, color = "red")
plt.show()
```

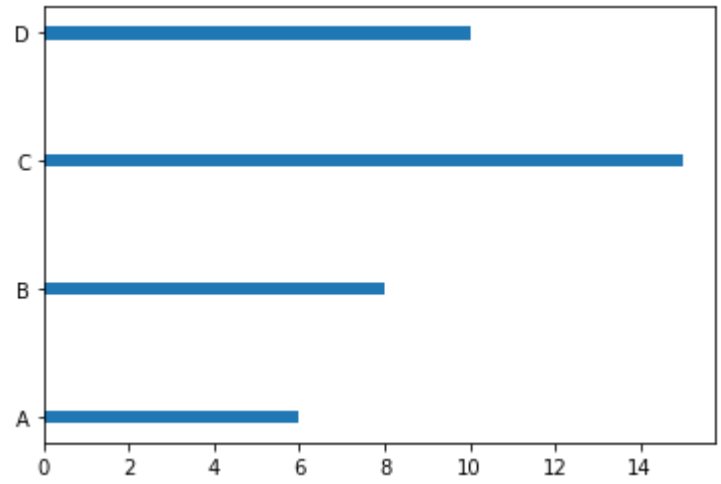



```
import matplotlib.pyplot as plt
import numpy as np

x = np.array(["A", "B", "C", "D"])
y = np.array([6, 8, 15, 10])
```

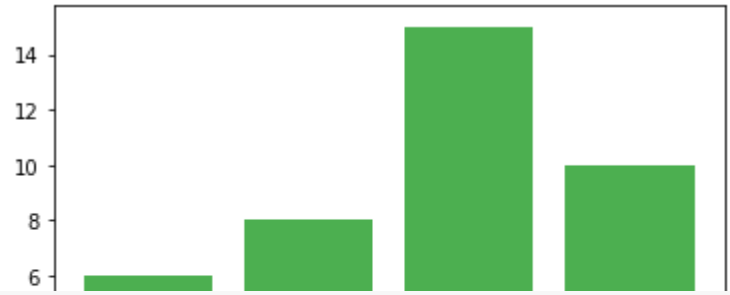
```
plt.bar(x, y, width = 0.1)
plt.show()
```



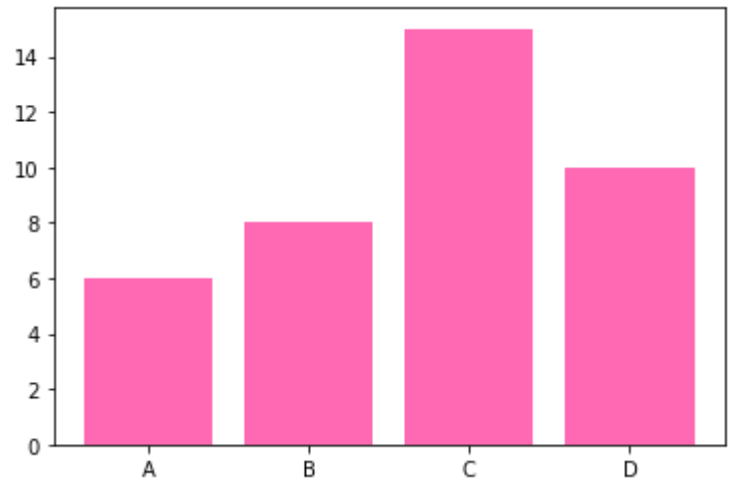

```
import matplotlib.pyplot as plt
import numpy as np

x = np.array(["A", "B", "C", "D"])
y = np.array([6, 8, 15, 10])

plt.barh(x, y, height = 0.1)
plt.show()
```



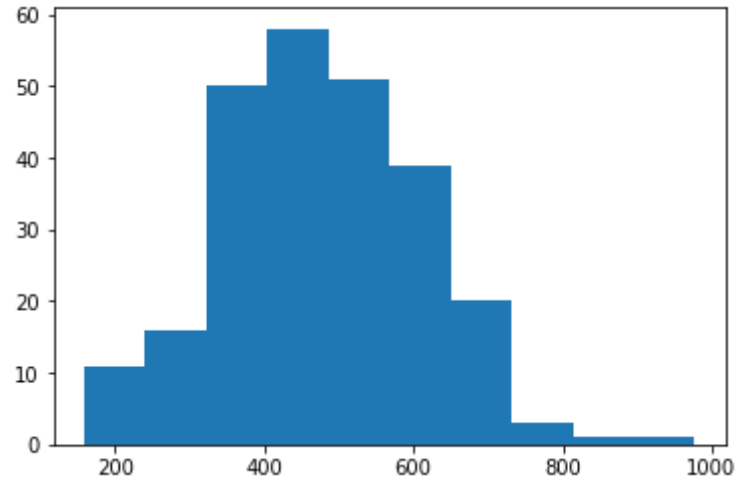

```
import matplotlib.pyplot as plt
import numpy as np

x = np.array(["A", "B", "C", "D"])
y = np.array([6, 8, 15, 10])

plt.bar(x, y, color = "#4CAF50")
plt.show()
```



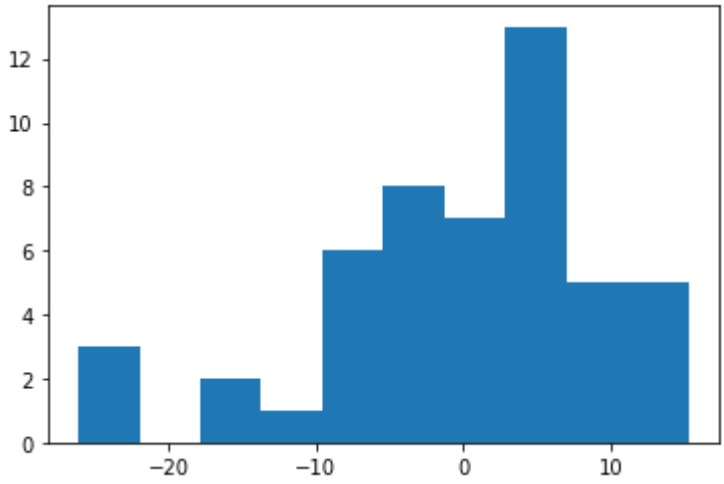

```
import matplotlib.pyplot as plt
import numpy as np

x = np.array(["A", "B", "C", "D"])
y = np.array([6, 8, 15, 10])

plt.bar(x, y, color = "hotpink")
plt.show()
```




```
#histogram
import matplotlib.pyplot as plt
import numpy as np

x = np.random.normal(470, 130, 250)

plt.hist(x)
plt.show()
```

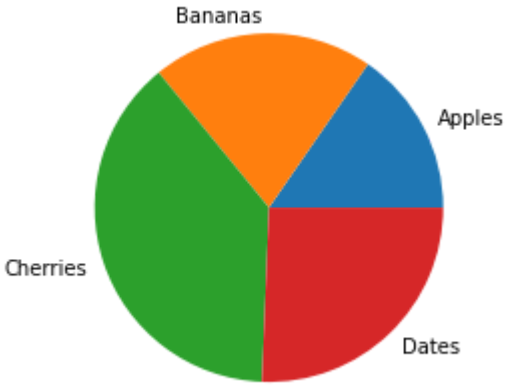


```
import matplotlib.pyplot as plt
import numpy as np

x = np.random.normal(1, 10, 50)

plt.hist(x)
plt.show()
```

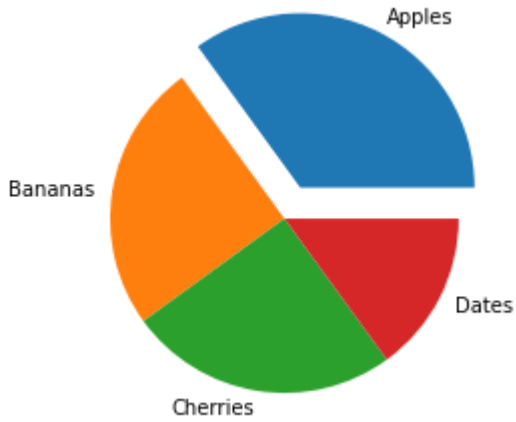



```
#pie chart
import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])

plt.pie(y)
plt.show()
```

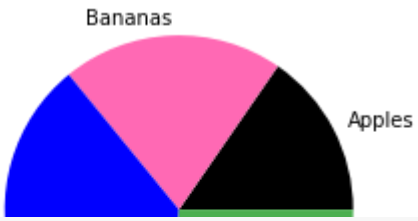
```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([6, 8, 15, 10])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]

plt.pie(y, labels = mylabels)
plt.show()
```



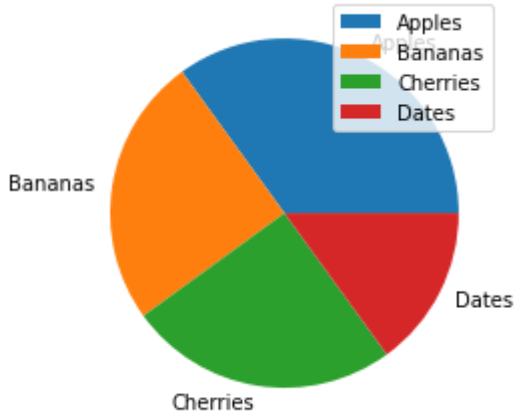

```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
myexplode = [0.2, 0, 0, 0]

plt.pie(y, labels = mylabels, explode = myexplode)
plt.show()
```



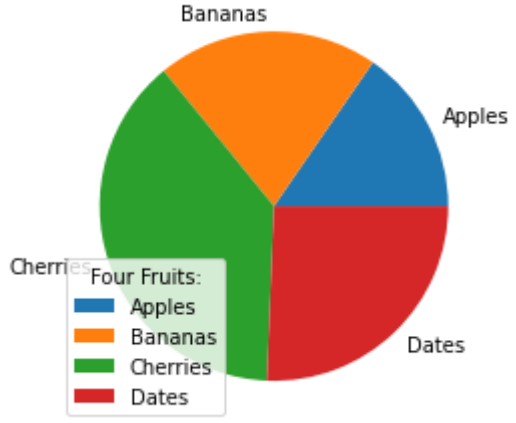

```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([6, 8, 15, 10])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
mycolors = ["black", "hotpink", "b", "#4CAF50"]

plt.pie(y, labels = mylabels, colors = mycolors)
plt.show()
```



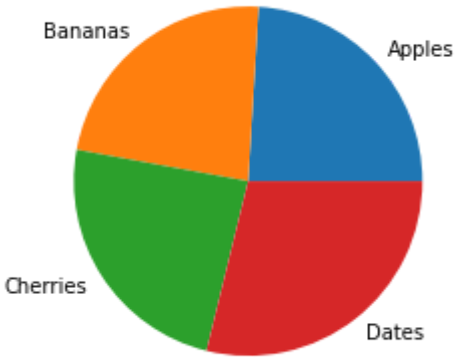

```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]

plt.pie(y, labels = mylabels)
plt.legend()
plt.show()
```



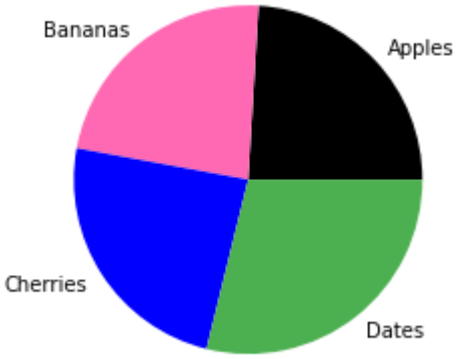

```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([6, 8, 15, 10])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]

plt.pie(y, labels = mylabels)
plt.legend(title = "Four Fruits:")
plt.show()
```



```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([25,24,25,30])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]

plt.pie(y, labels = mylabels)
plt.show()
```

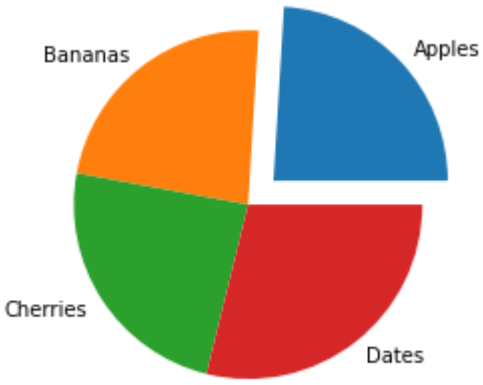



```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([25,24,25,30])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
mycolors = ["black", "hotpink", "b", "#4CAF50"]

plt.pie(y, labels = mylabels, colors = mycolors)
plt.show()
```




```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([25,24,25,30])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
myexplode = [0.2, 0, 0, 0]
```

```
plt.pie(y, labels = mylabels, explode = myexplode)
plt.show()
```




```
import matplotlib.pyplot as plt
import numpy as np

y = np.array([25,24,25,30])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]

plt.pie(y, labels = mylabels)
plt.legend()
plt.show()
```