In [ ]:
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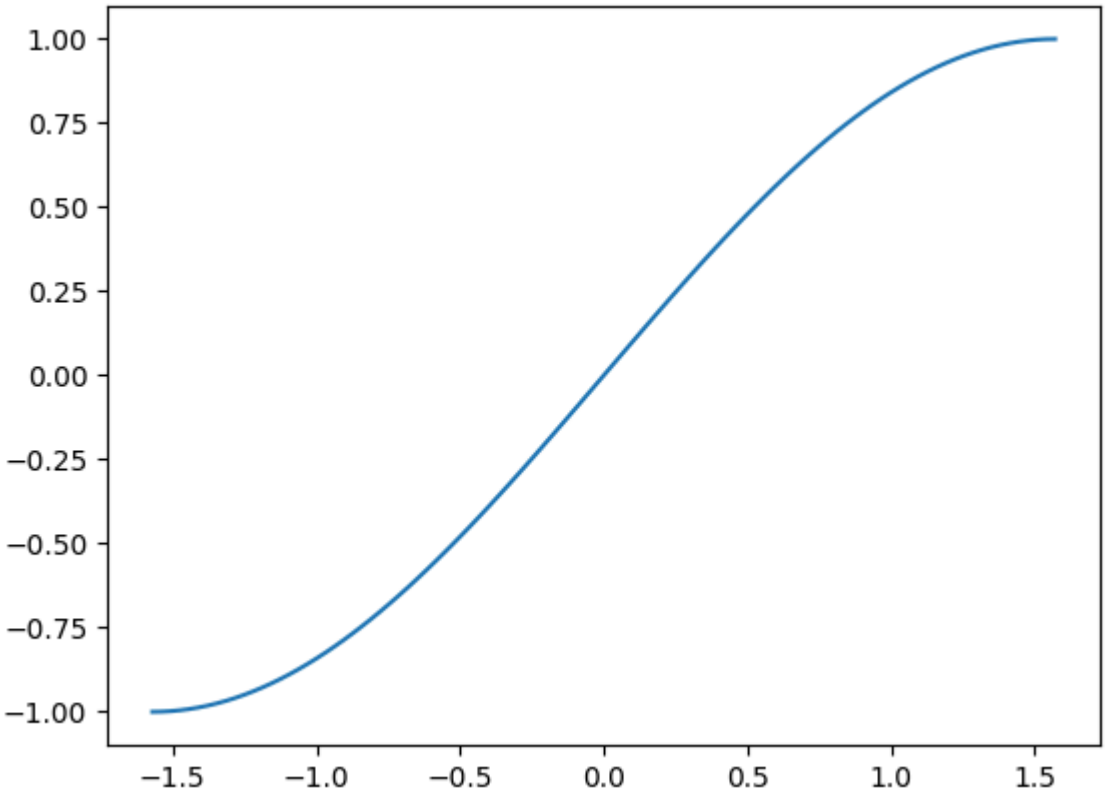
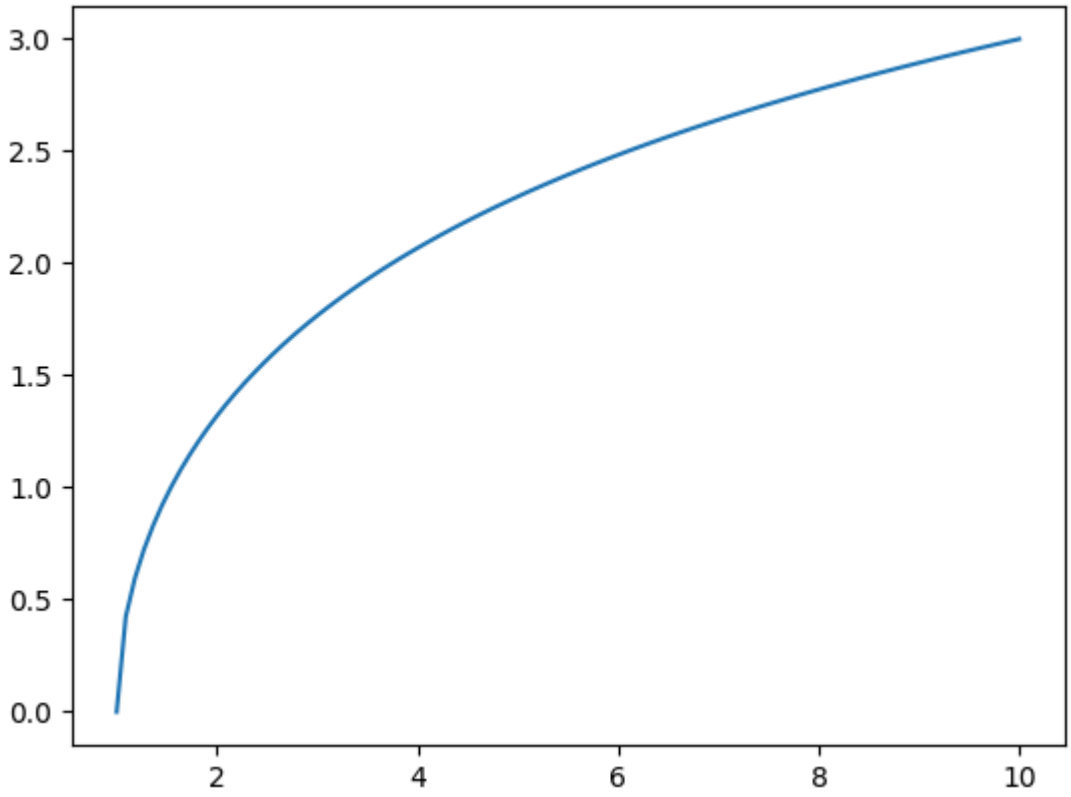
std -SY Bsc(CS)
Batch - H
Date 28/12/2024
Practical no 1 - Graph Plotting 1
```

In [ ]:
```
Q1)plot the graph for the following function
```

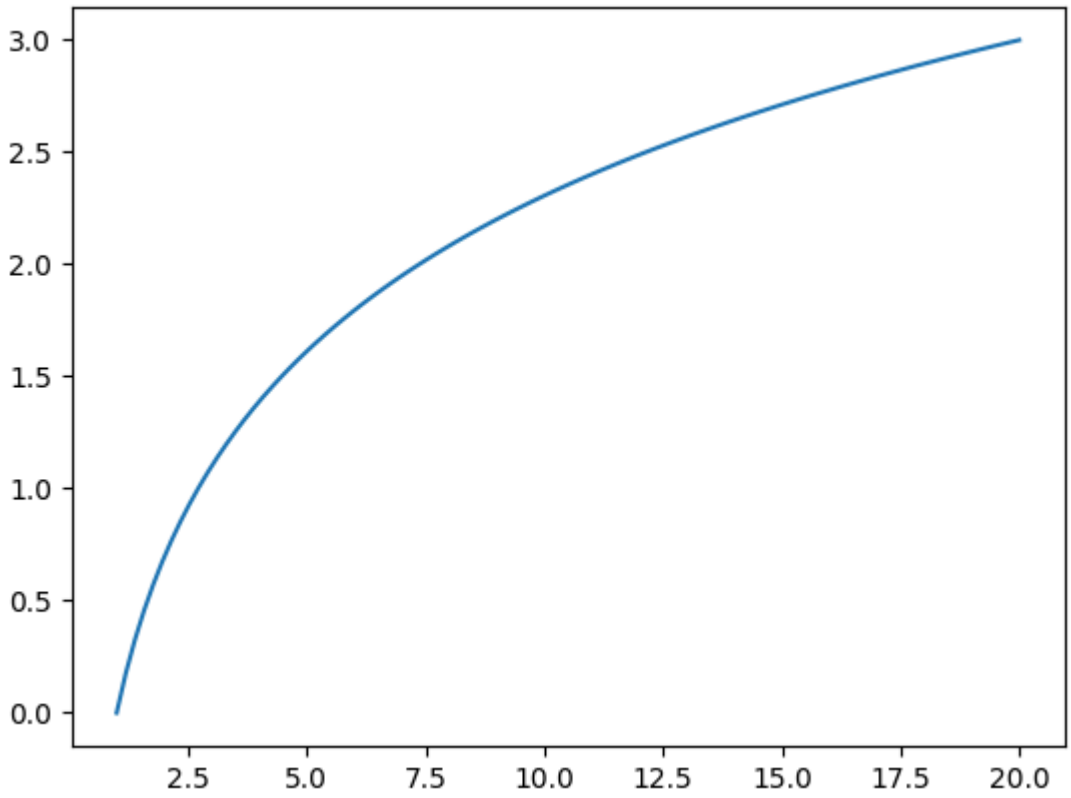
In [1]:
```
from pylab import*
import numpy as np
x=np.linspace(-pi/2,pi/2,100)
f=np.sin(x)
plot(x,f)
show()
```



In [2]:
```
from pylab import*
import numpy as np
x=np.linspace(1,10,100)
f=np.arccosh(x)
plot(x,f)
show()
```

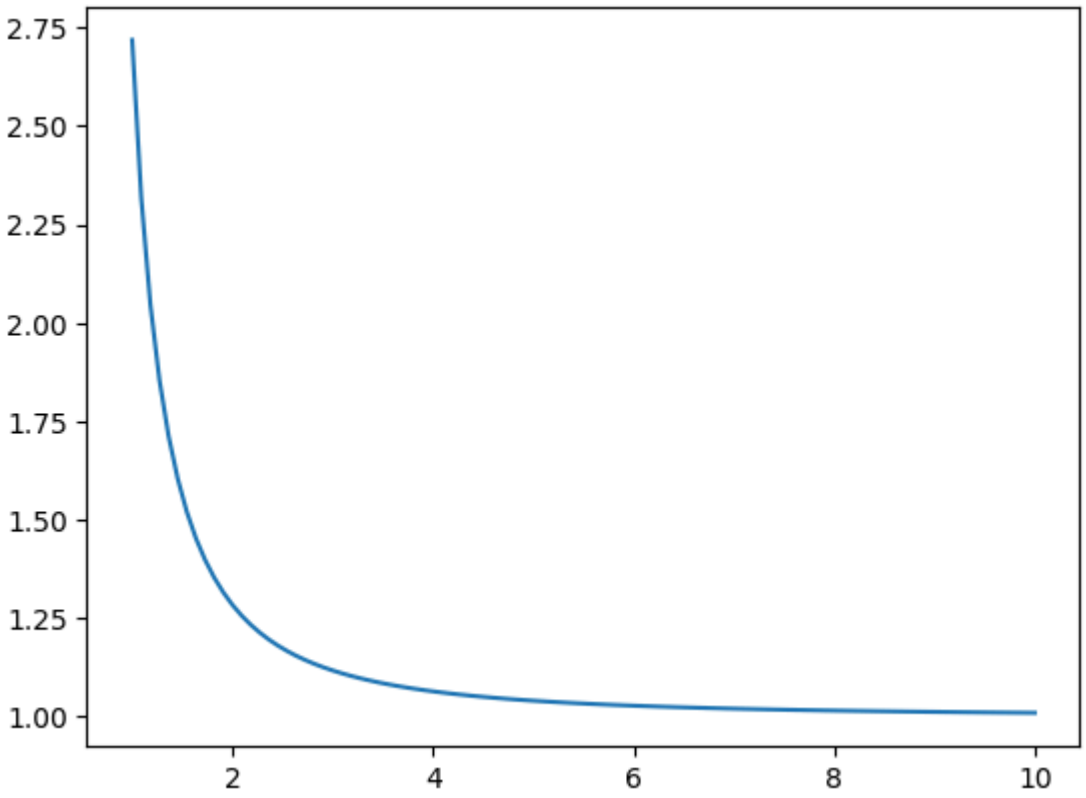


In [7]:
```
from pylab import*
import numpy as np
x=np.linspace(1,20,100)
f=np.log(x)
plot(x,f)
show()
```

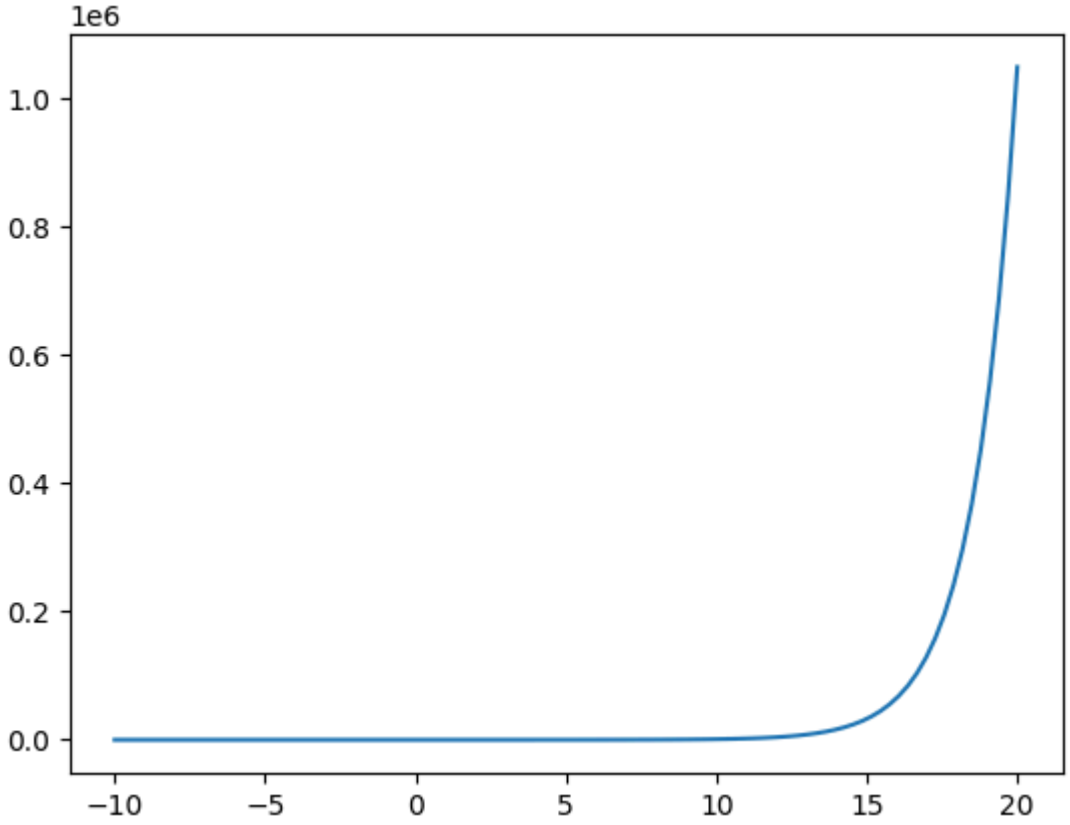


In [8]:
```
from pylab import*
import numpy as np
```

```
x=np.linspace(1,10,100)
f=np.exp(1/x**2)
plot(x,f)
show()
```

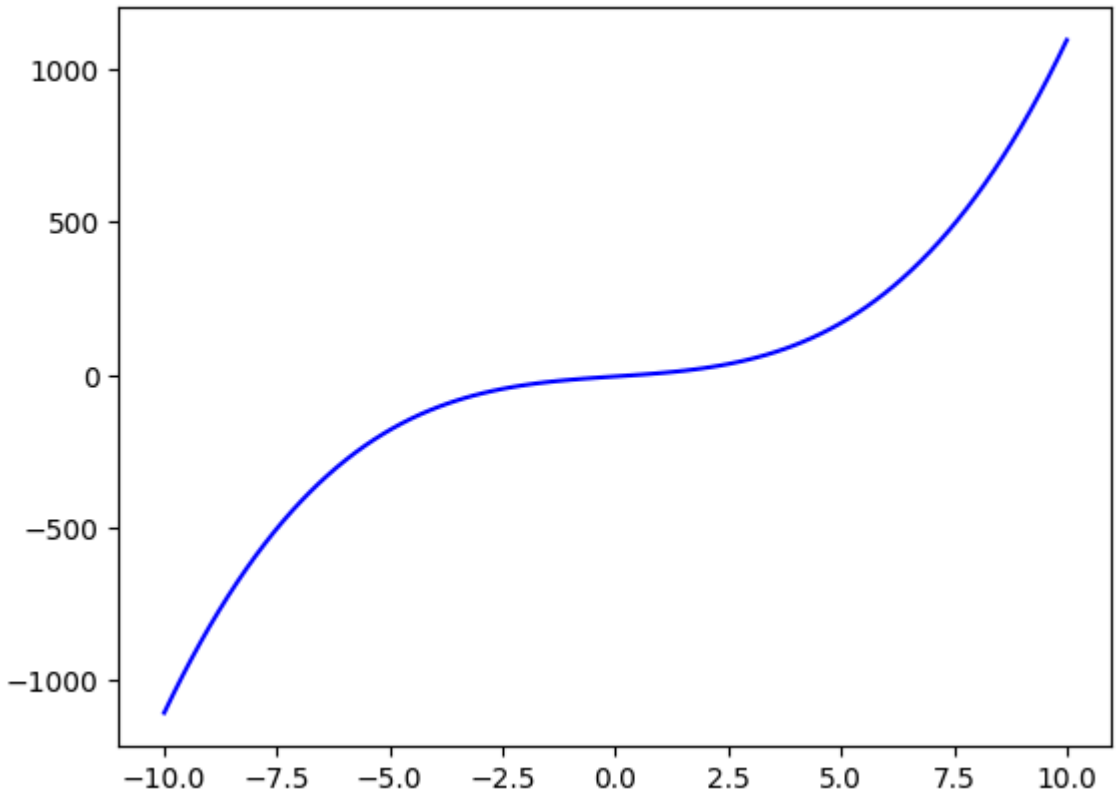


In [10]:
```
from pylab import*
import numpy as np
x=np.linspace(-10,20,100)
f=2**x
plot(x,f)
show()
```



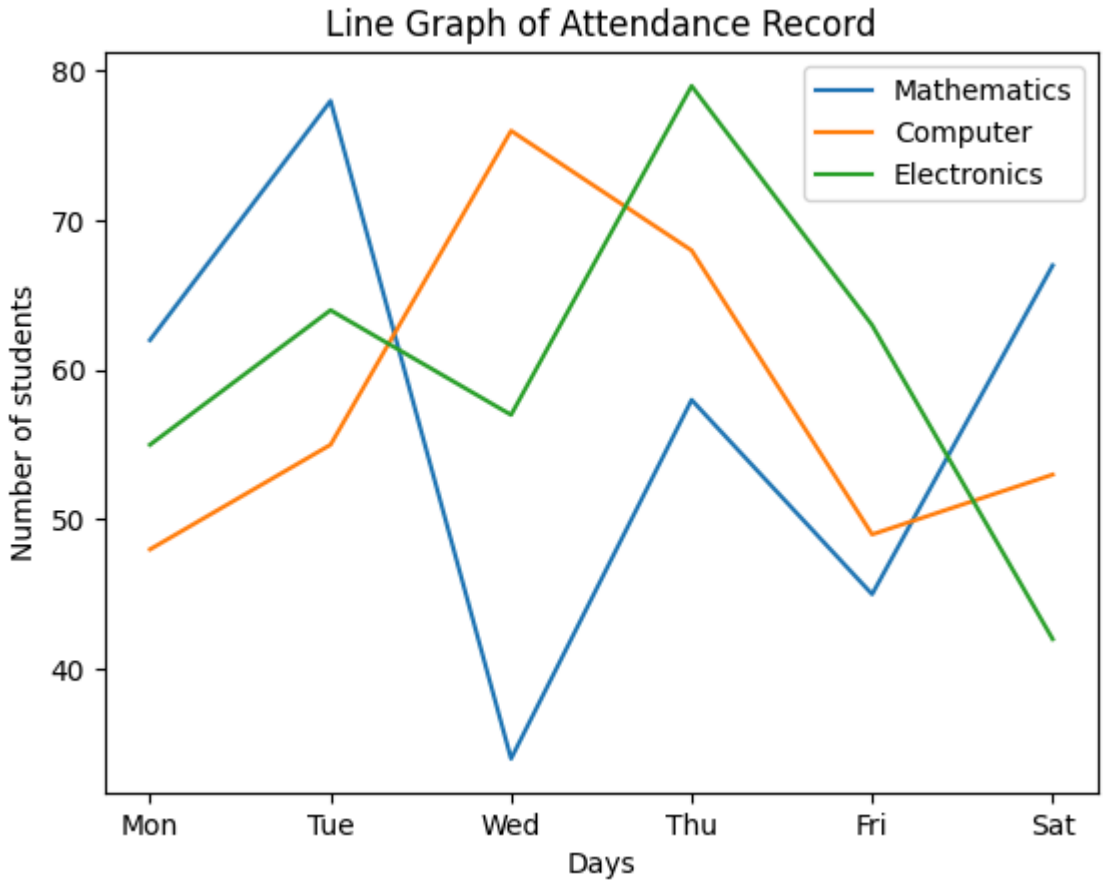
In [ ]:
```
Q2)write the python program to plot the graph y= x^2 = 10x-5,for x(-10,10) in re
```

In [14]:
```
from pylab import*
import numpy as np
x=np.linspace(-10,10,100)
y=x**3 +10*x -5
plot(x,y,color ='blue')
show()
```



In [ ]:
```
Q3)subject wise attendance record of sybsc cs  class of 80 student for  a week i
```

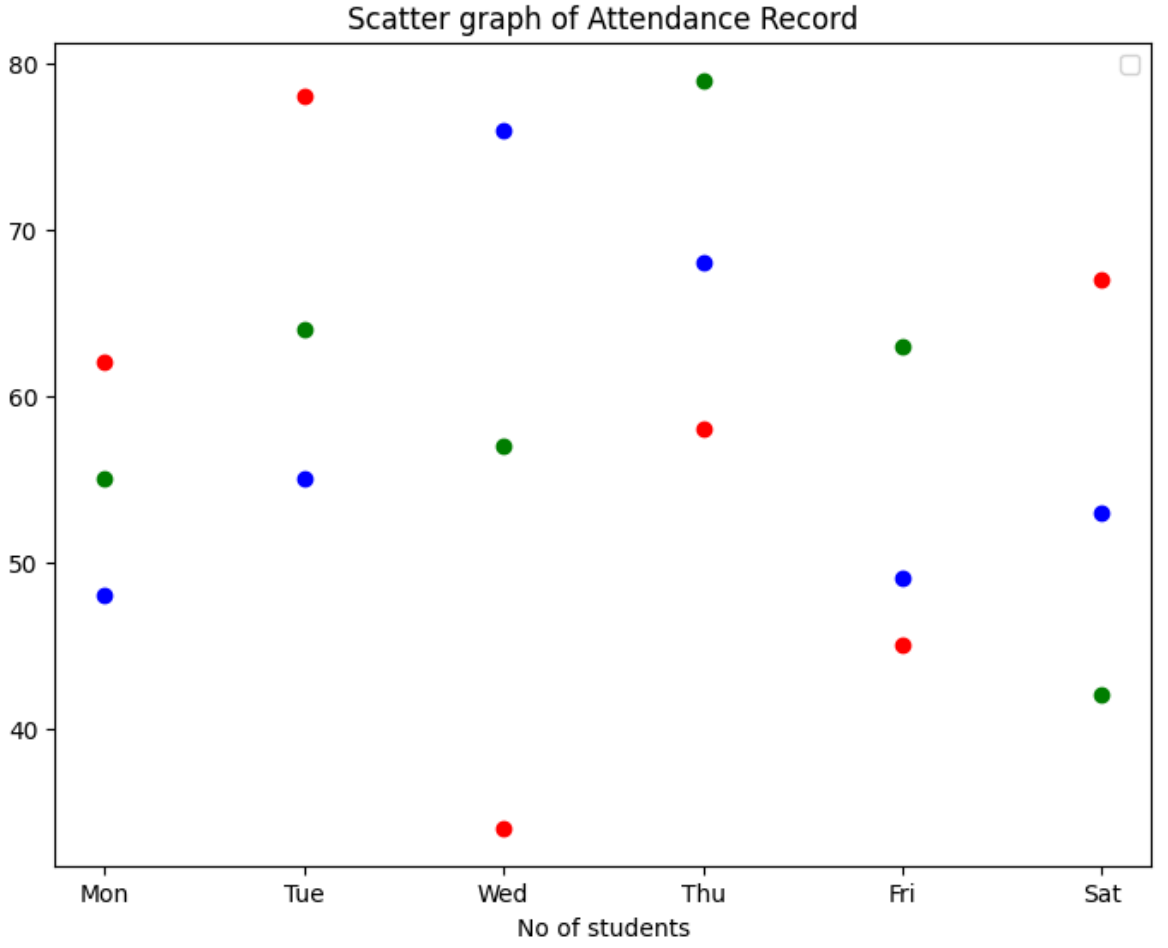
In [17]:
```
import matplotlib.pyplot as plt
import numpy as np
x1=['Mon','Tue','Wed','Thu','Fri','Sat']
y1=[62,78,34,58,45,67]
plt.plot(x1,y1,label="Mathematics")
x2=['Mon','Tue','Wed','Thu','Fri','Sat']
y2=[48,55,76,68,49,53]
plt.plot(x2,y2,label="Computer")
x3=['Mon','Tue','Wed','Thu','Fri','Sat']
y3=[55,64,57,79,63,42]
plt.plot(x3,y3,label="Electronics")
plt.xlabel('Days')
Text(0.5,0,'Days')
plt.ylabel('Number of students')
Text(0,0.5,'Number of students')
plt.title("Line Graph of Attendance Record")
plt.legend()
plt.show()
```



In [19]:
```
import matplotlib.pyplot as plt
import numpy as np
Mathematics=[62,78,34,58,45,67]
Computer=[48,55,76,68,49,53]
Electronics=[55,64,57,79,63,42]
Days=['Mon','Tue','Wed','Thu','Fri','Sat']
fig=plt.figure()
ax=fig.add_axes([0,0,1,1])
ax.scatter(Days,Mathematics,color='r')
ax.scatter(Days,Computer,color='b')
```

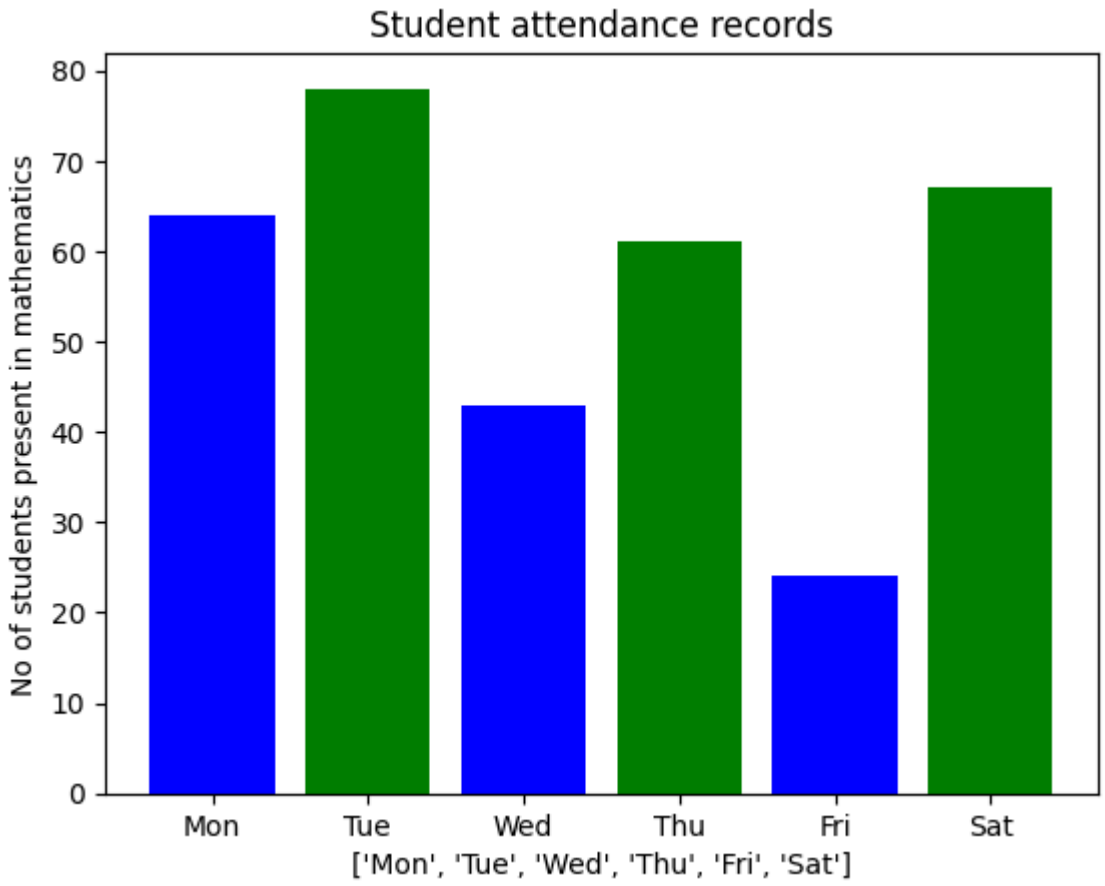
```
ax.scatter(Days,Electronics,color='g')
ax.set_xlabel(Days)
Text('Days')
ax.set_xlabel('No of students')
Text('No of students')
plt.title("Scatter graph of Attendance Record")
plt.legend()
plt.show()
```

```
C:\Users\Student\AppData\Local\Temp\ipykernel_6948\4285316498.py:17: UserWarning:
No artists with labels found to put in legend.  Note that artists whose label sta
rt with an underscore are ignored when legend() is called with no argument.
  plt.legend()
```



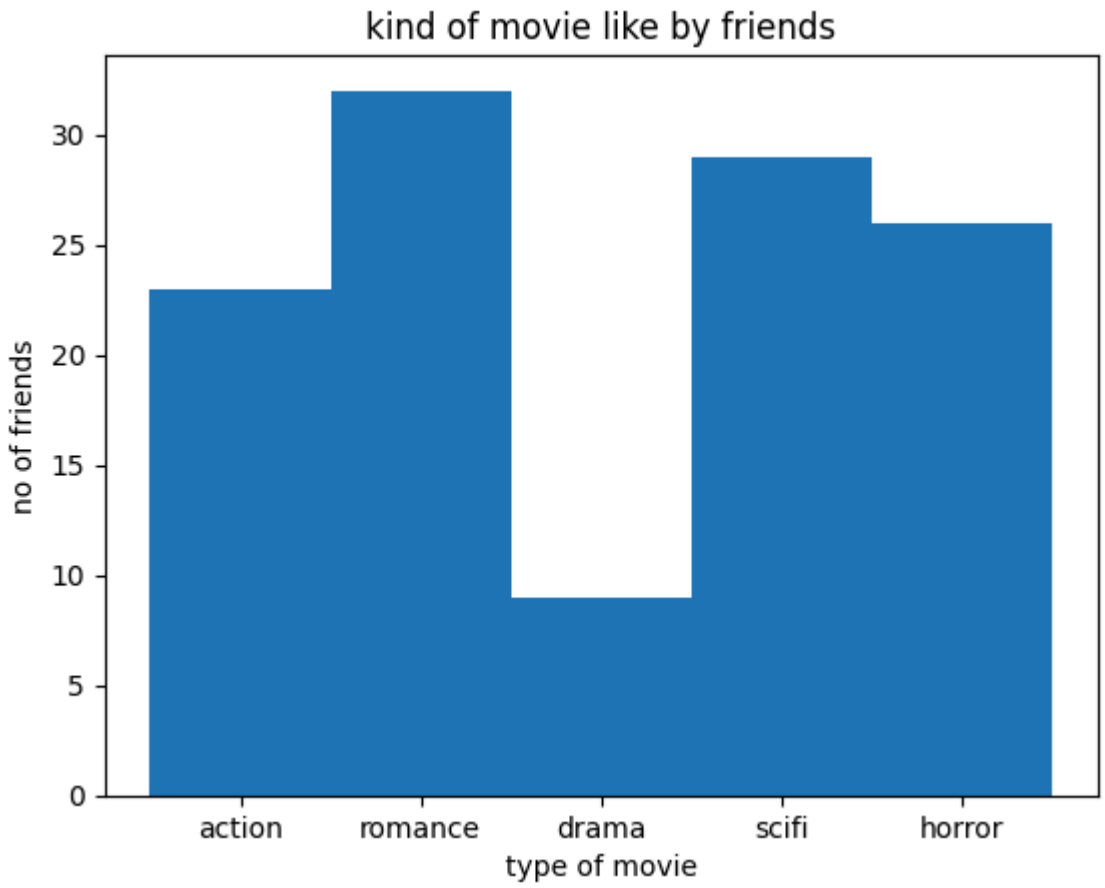
In [ ]:
```
Q4)attendance record of sybsc cs class of 80 student for a week of mathematics s
```

In [21]:
```
import matplotlib.pyplot as plt
import numpy as np
left=[1,2,3,4,5,6]
height=[64,78,43,61,24,67]
tick_label=['Mon','Tue','Wed','Thu','Fri','Sat']
plt.bar(left,height,tick_label=tick_label,width=0.8,color=['blue','green'])
plt.xlabel(Days)
Text(0.5,0,'Days')
plt.ylabel("No of students present in mathematics")
Text(0,0.5,'No of student present in mathematics')
plt.title("Student attendance records")
Text(0.5,1.0,'Students attendance records')
plt.show()
```

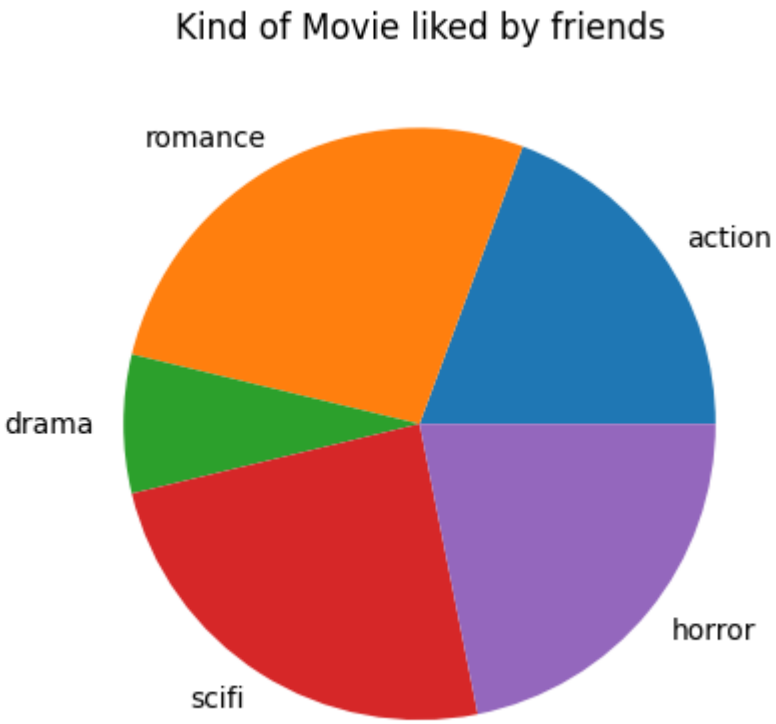


In [ ]:
```
Q5)imagine you survey your 100 friends  to kind of movie they like best
```

In [23]:
```
import matplotlib.pyplot as plt
import numpy as np
x=np.array(['action','romance','drama','scifi','horror'])
y=np.array([23,32,9,29,26])
plt.bar(x,y,1)
plt.xlabel("type of movie")
plt.Text('type of movie')
plt.ylabel("no of friends")
plt.Text('no of friends')
plt.title("kind of movie like by friends")
plt.Text("kind of movie like by friends")
plt.show()
```



In [3]:
```
import matplotlib.pyplot as plt
import numpy as np
x=np.array(['action','romance','drama','scifi','horror'])
y=np.array([23,32,9,29,26])
mylabels=(['action','romance','drama','scifi','horror'])
plt.title("Kind of Movie liked by friends")
plt.Text('Kind of Movie liked by friends')
plt.pie(y,labels=mylabels)
plt.show()
```


Kind of Movie liked by friends
romance
action
drama
horror
scifi

In [ ]: