Kernel: SageMath 10.1

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ROLL NO : 58

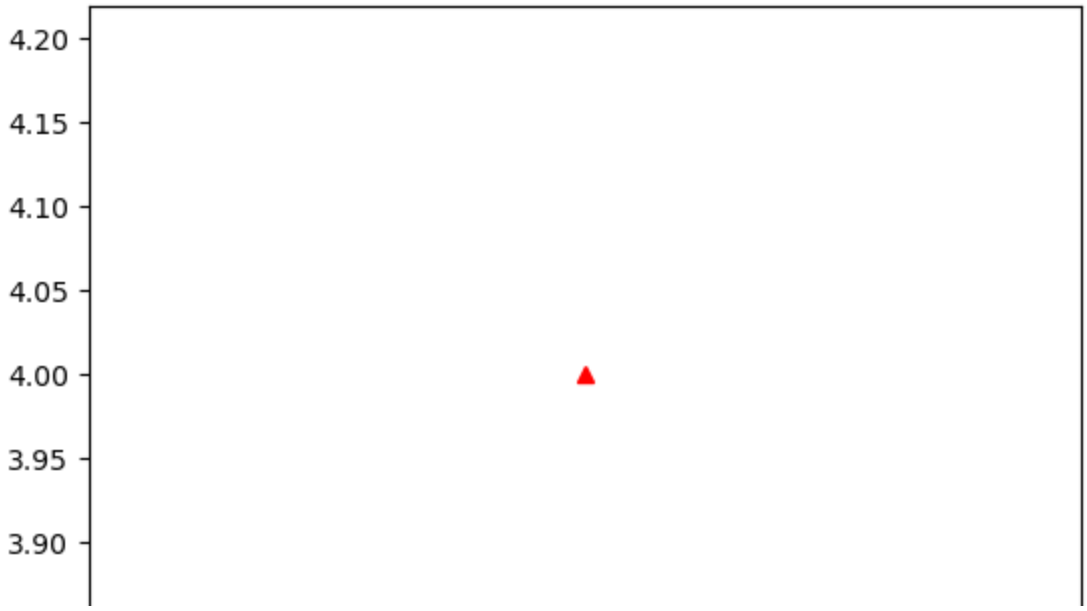
EXPERIMENT NO : 1

AIM : TO PLOT LINE X&Y,COORDINATE AXIS,MULTIPLE LINES,LINE & CURVE, 3D SHAPES.

In [1]:
```
from matplotlib import pyplot as plt
```

In [2]:
```
plt.plot(3,4,marker="^",color="red")
```

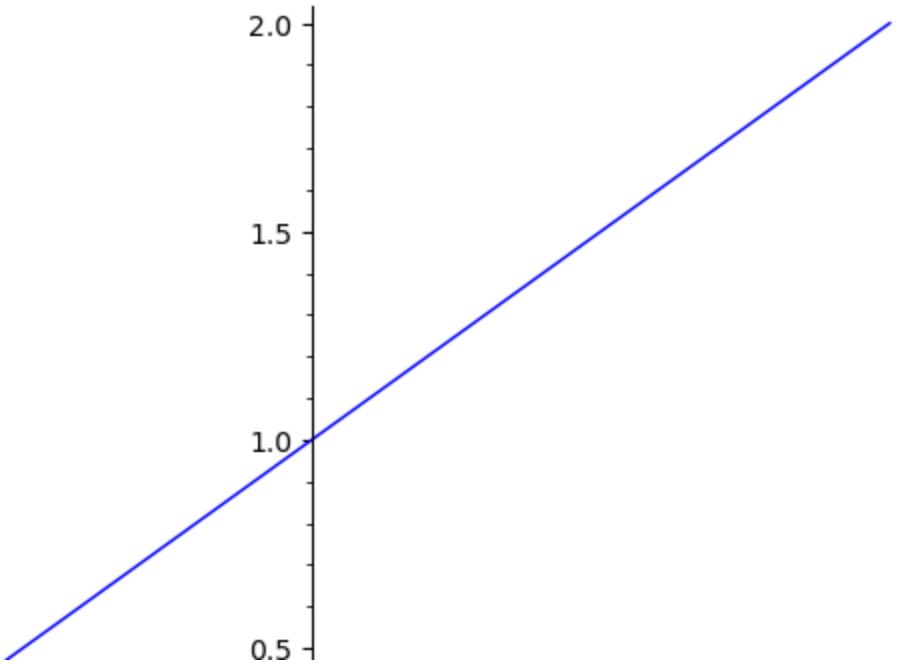
Out[2]:
```
[<matplotlib.lines.Line2D object at 0x7fc3a309ea10>]
```



1 LINE

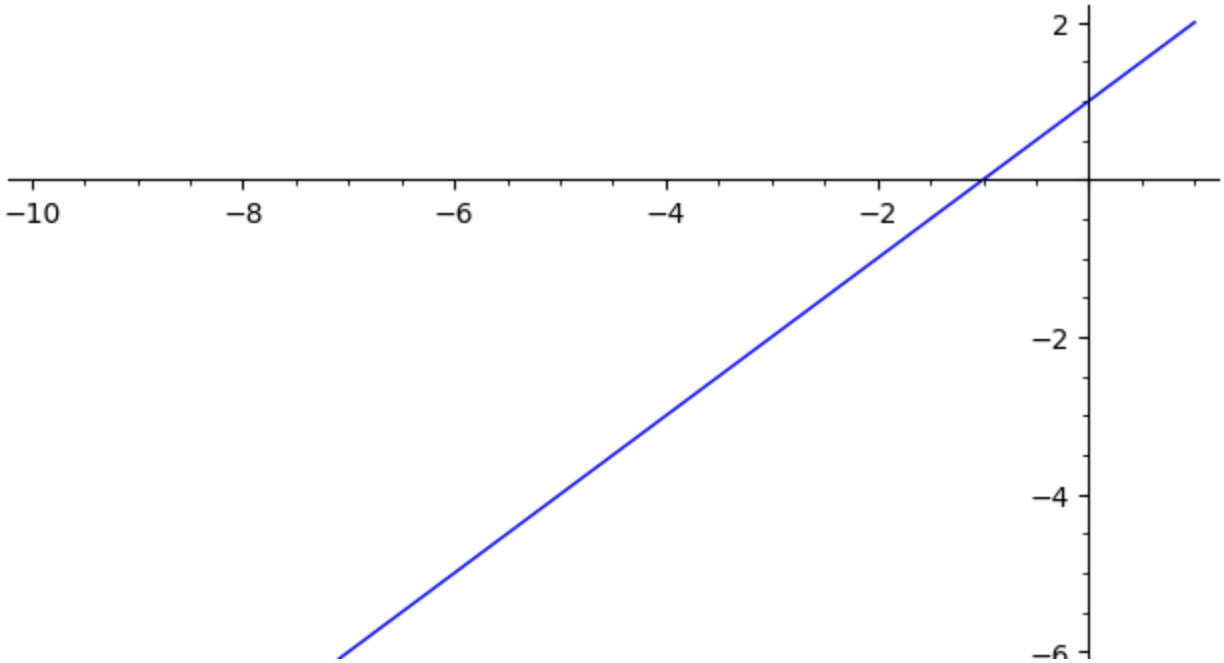
In [3]:
```
plot(x+1)
```

Out[3]:



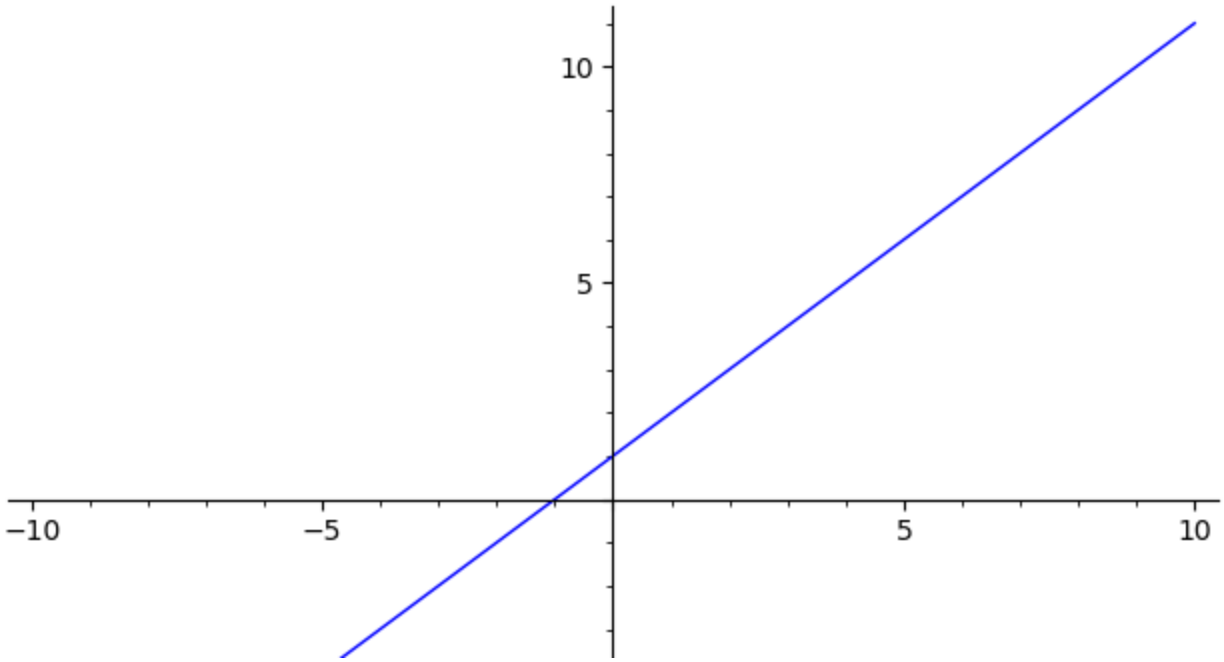
In [4]:
```
plot(x+1,xmin=-10)
```

Out[4]:



In [6]:
```
plot(x+1,xmin=-10,xmax=10)
```

Out[6]:



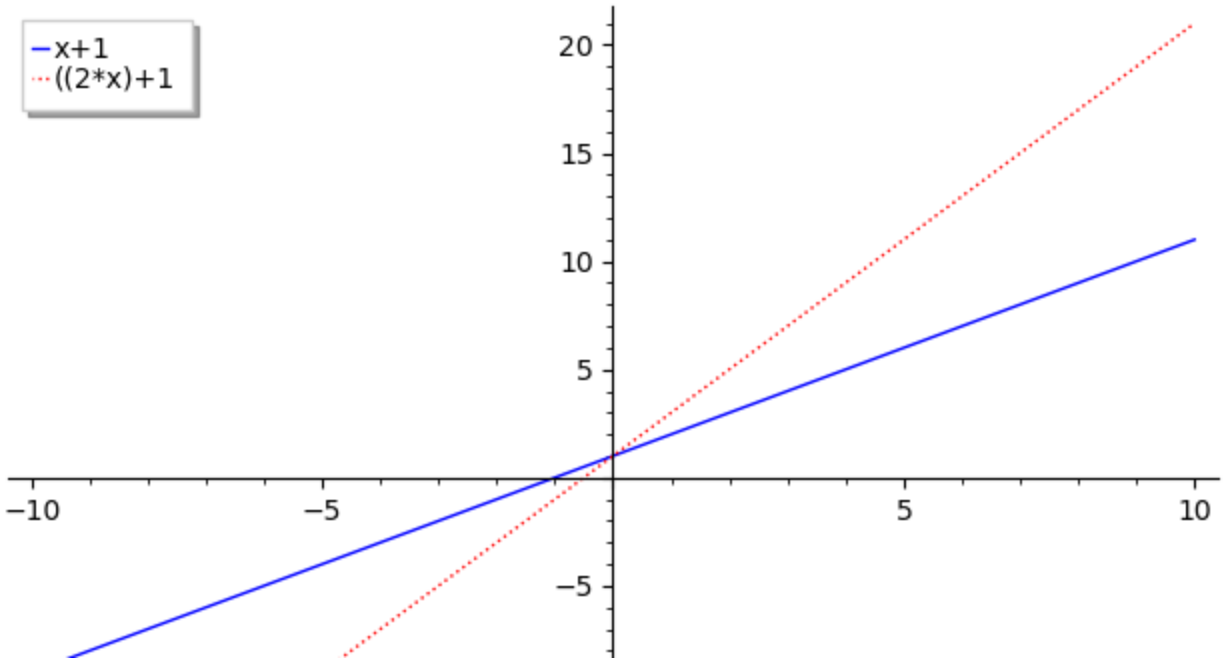
2 LINES

In [7]:
```
line_1=plot(x+1,color="blue",xmin="-10",xmax="10",legend_label="x+1")
```

In [8]:
```
line_2=plot((2*x)+1,color="red",linestyle="dotted",xmin="-10",xmax="10",legend_
label="((2*x)+1")
```

In [9]:
```
line_1+line_2
```

Out[9]:



Three lines

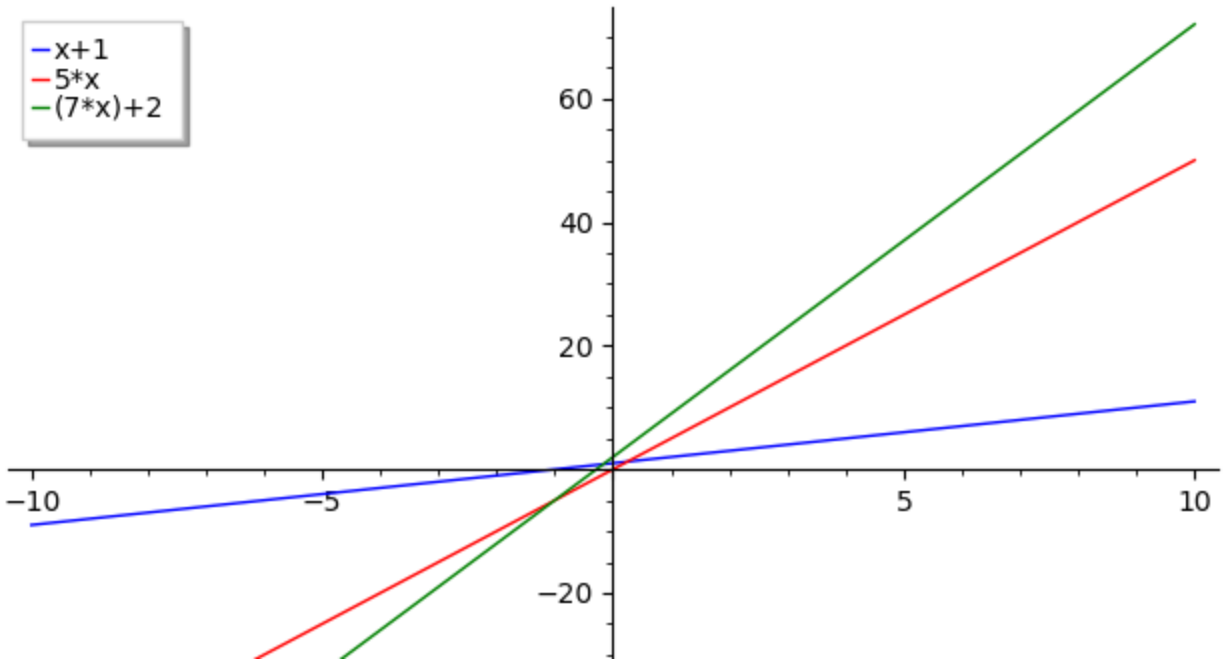
In [11]:
```
line_1=plot(x+1,color="blue",xmin="-10",xmax="10",legend_label="x+1")
```

In [12]:
```
line_2=plot(5*x,color="red",xmin="-10",xmax="10",legend_label="5*x")
```

In [13]:
```
line_3=plot((7*x)+2,color="green",xmin="-10",xmax="10",legend_label="(7*x)+2")
```

In [14]:
```
line_1+line_2+line_3
```

Out[14]:



Two lines and one curve

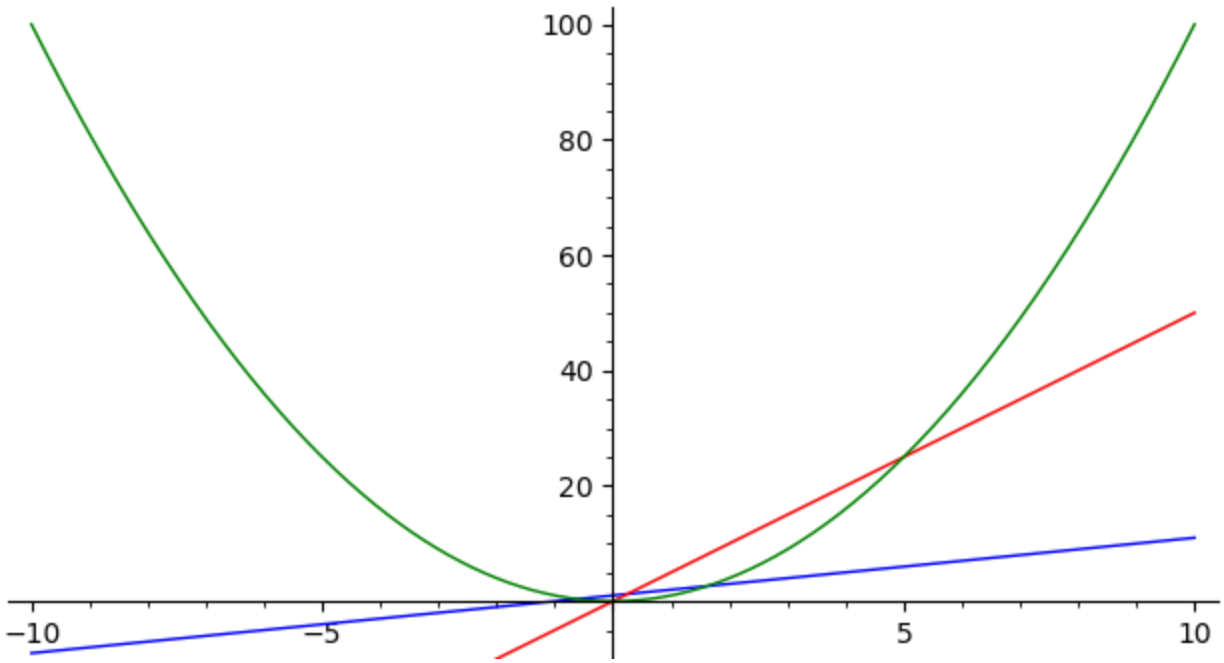
In [15]:
```
line_1=plot(x+1,color="blue",xmin="-10",xmax="10",legend_label="x+1")
```

In [16]:
```
line_2=plot(5*x,color="red",xmin="-10",xmax="10",legend_label="5*x")
```

In [17]:
```
line_3=plot(x^2,color="green",xmin="-10",xmax="10",legend_label="x^2")
```

In [18]:
```
 line_1+line_2+line_3
```

Out[18]:

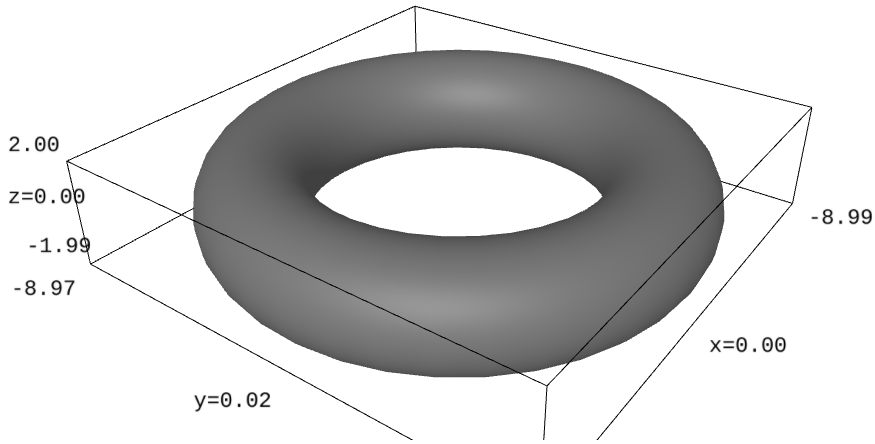


3D shapes

In [19]:
```
from sage.plot.plot3d.shapes import Torus
```

In [20]:
```
Torus(7,2,color="grey")
```

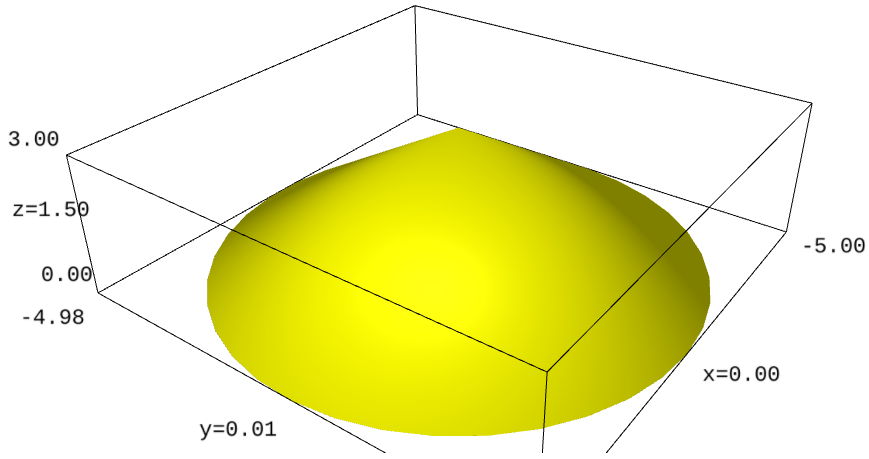
Out[20]:



In [21]:
```
from sage.plot.plot3d.shapes import Cone
```

In [22]:
```
Cone(5,3, color='yellow')
```

Out[22]:



CONCLUSION : plotting of a line,ordinate axis x and y axis,multiple lines is successfully satisfied using sage maths.