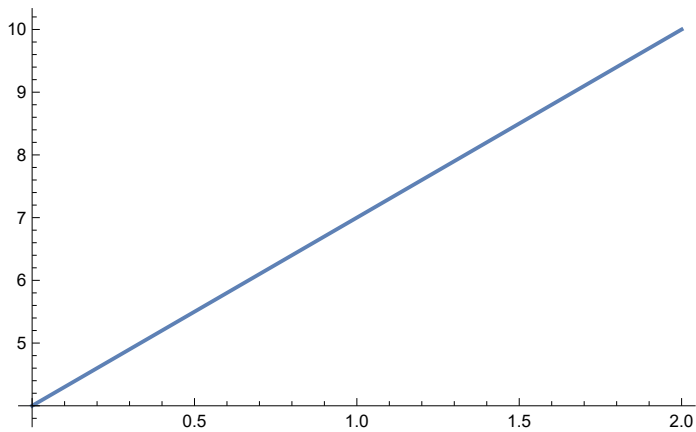

Zadanie 1

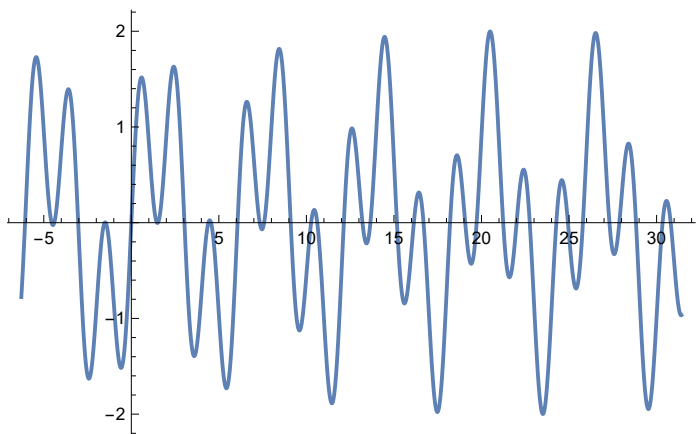
`In[]:= Plot[3 x + 4, {x, 0, 2}]`

`Out[]:=`



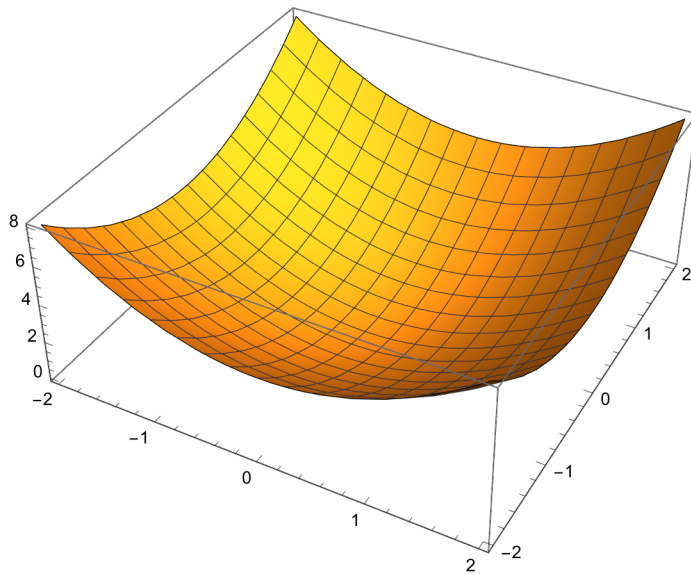
`In[]:= Plot[Sin[x] + Sin[π x], {x, -2π , 10π }]`

`Out[]:=`



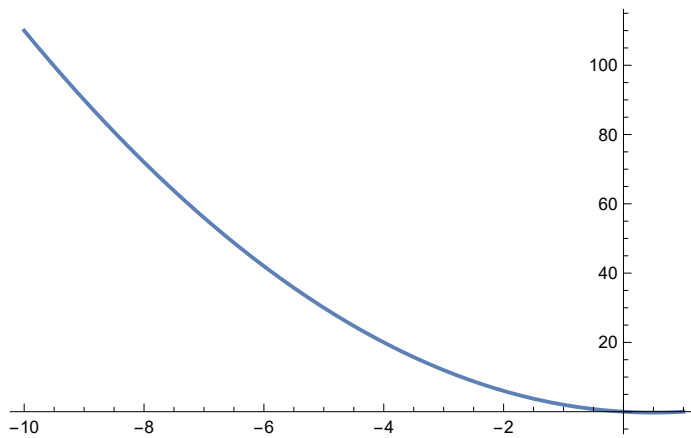
```
In[ ]:= Plot3D[x2 + y2, {x, -2, 2}, {y, -2, 2}]
```

Out[]=



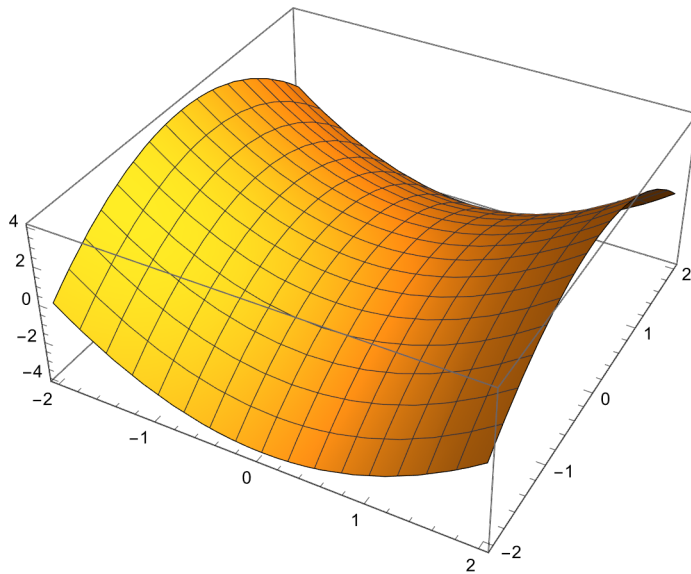
```
In[ ]:= Plot[x2 - x, {x, -10, 1}]
```

Out[]=



```
In[ ]:= Plot3D[x2 - y2, {x, -2, 2}, {y, -2, 2}]
```

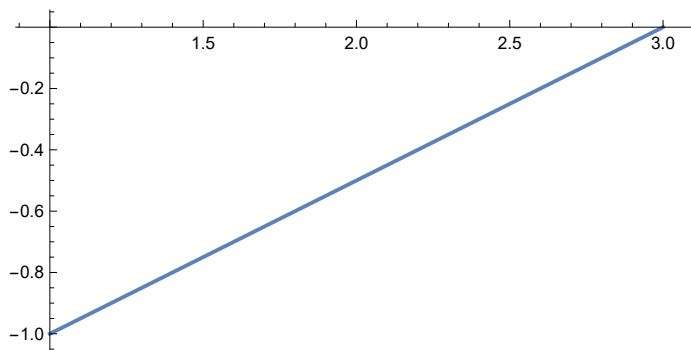
```
Out[ ]:=
```



Zadanie 2

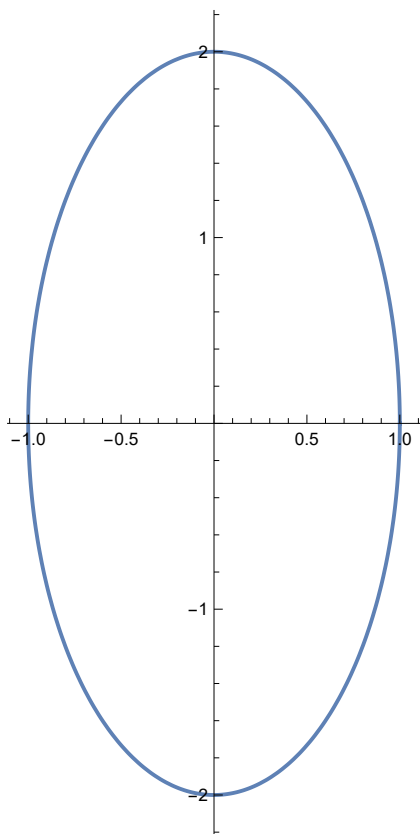
```
In[ ]:= ParametricPlot[{2 t + 1, t - 1}, {t, 0, 1}]
```

```
Out[ ]:=
```



```
In[ ]:= ParametricPlot[{Cos[t], 2 Sin[t]}, {t, 0, 2  $\pi$ }]
```

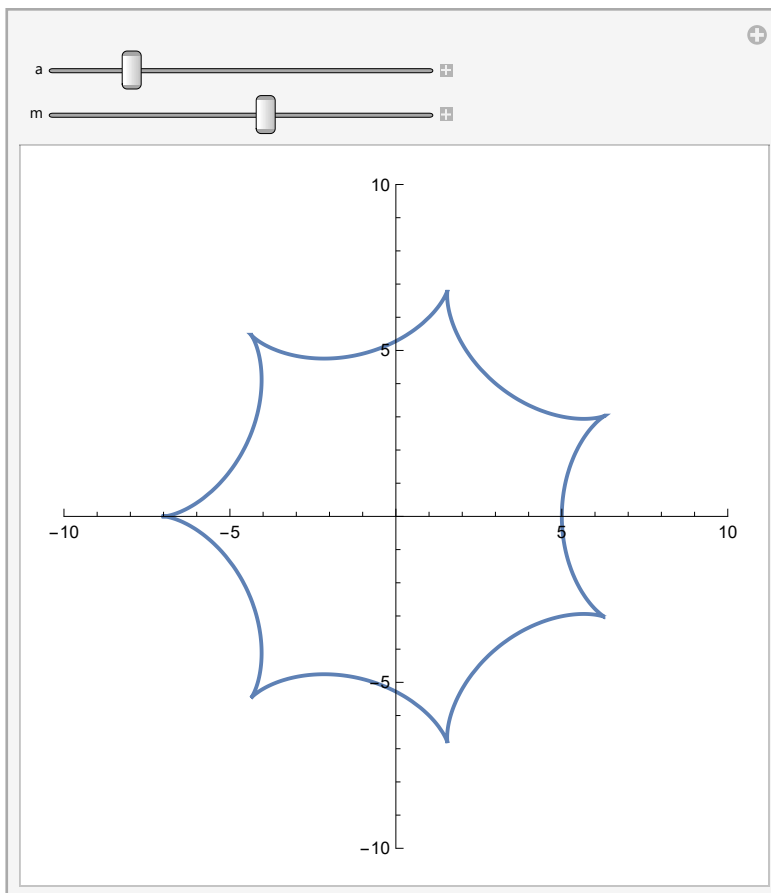
Out[]=



```
In[7]:= x[t_, a_, m_] := a (1 - m) Cos[t] - a Cos[(1 - m) t];
y[t_, a_, m_] := a (1 - m) Sin[t] - a Sin[(1 - m) t];
```

```
Manipulate[
  ParametricPlot[{x[t, a, m], y[t, a, m]},
    {t, 0, 2 π}, PlotRange → {{-10 a, 10 a}, {-10 a, 10 a}},
    {{a, 1}, 0.1, 5}, {{m, 7}, 3, 10}
]
```

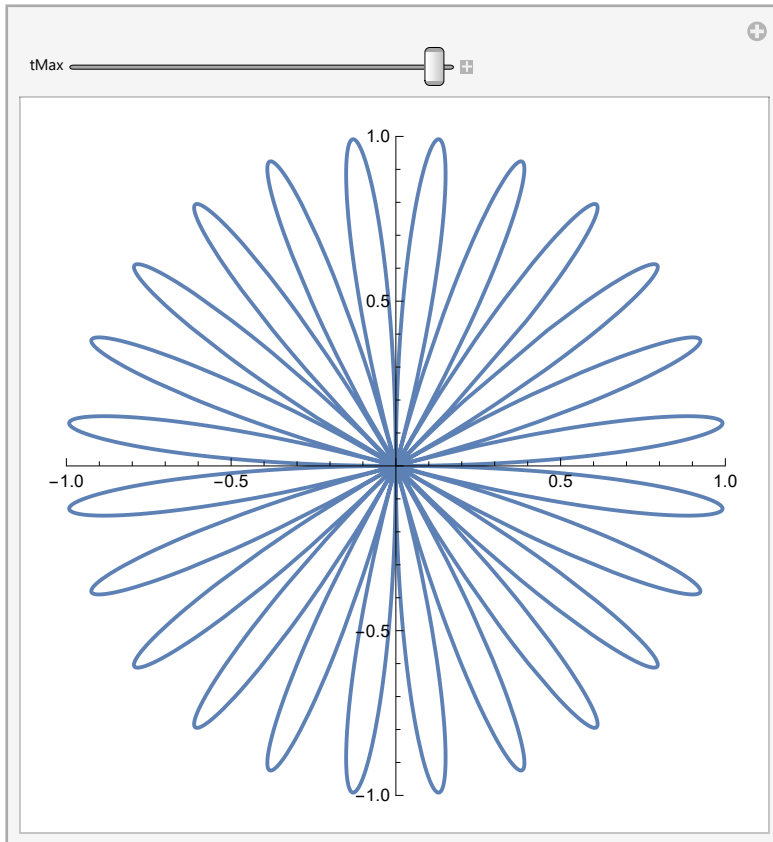
Out[9]=



```
In[1]:= x[t_] := Sin[12 t] × Cos[t];  
y[t_] := Sin[12 t] × Sin[t];
```

```
Manipulate[  
  ParametricPlot[{x[t], y[t]}, {t, 0, tMax}, PlotRange → {{-1, 1}, {-1, 1}},  
  {tMax, 0.001, 2 π}  
]
```

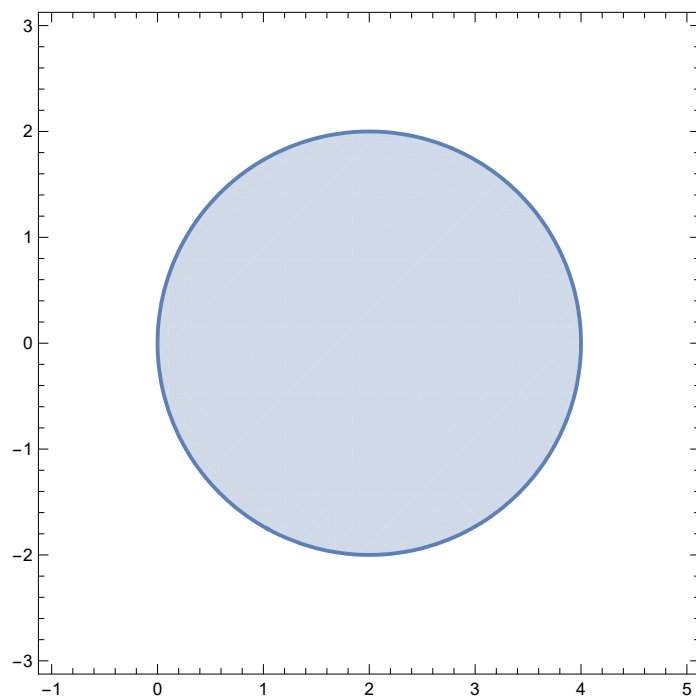
Out[3]=



Zadanie 3

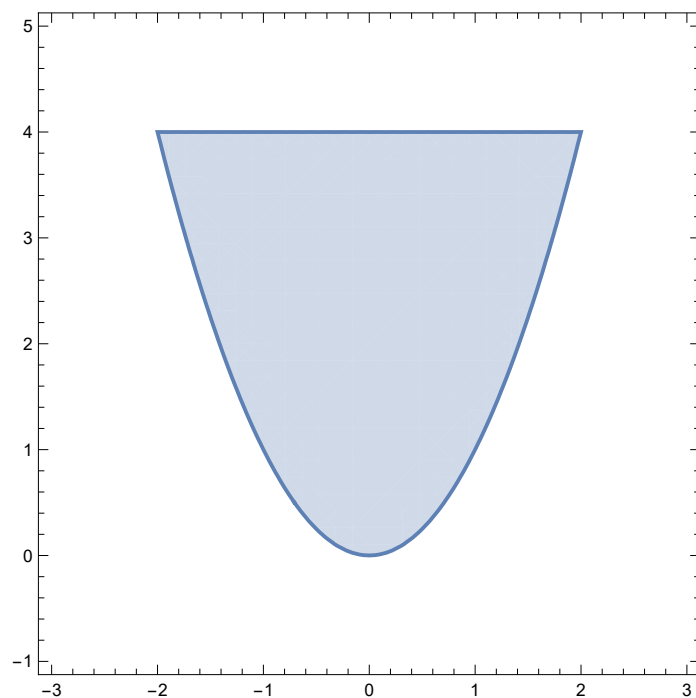
```
In[ ]:= RegionPlot[(x - 2)^2 + y^2 ≤ 4, {x, -1, 5}, {y, -3, 3}]
```

Out[]:=



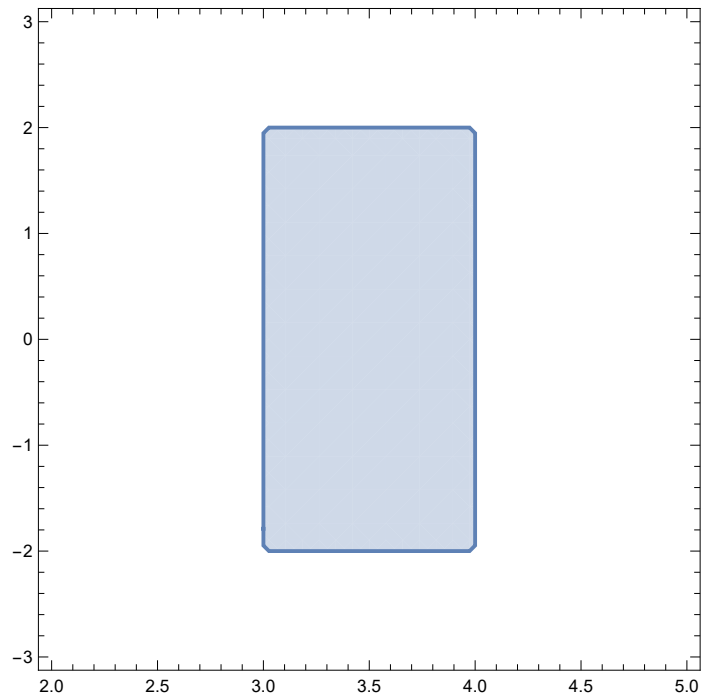
```
In[ ]:= RegionPlot[(y > x^2) && (y < 4), {x, -3, 3}, {y, -1, 5}]
```

Out[]:=



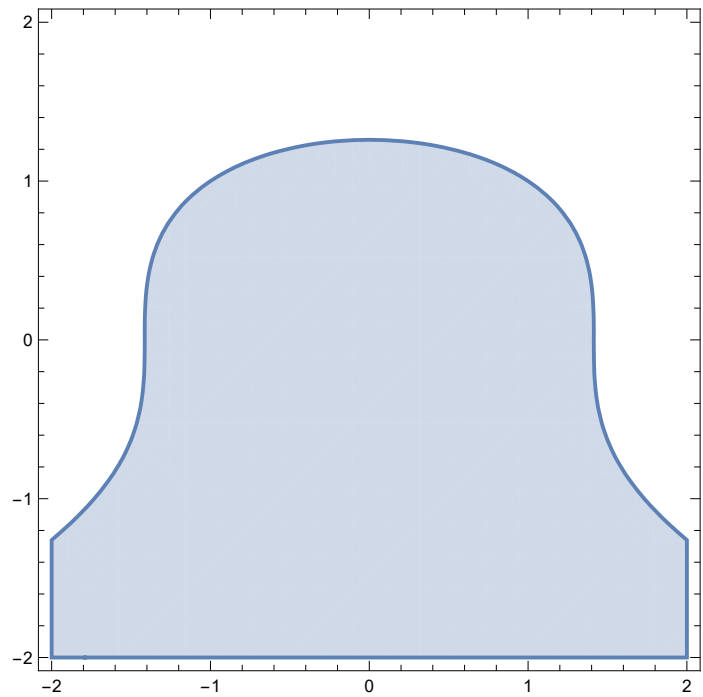
```
In[ ]:= RegionPlot[(3 < x < 4) && (-2 < y < 2), {x, 2, 5}, {y, -3, 3}]
```

Out[]:=



```
In[ ]:= RegionPlot[x^2 + y^3 < 2, {x, -2, 2}, {y, -2, 2}]
```

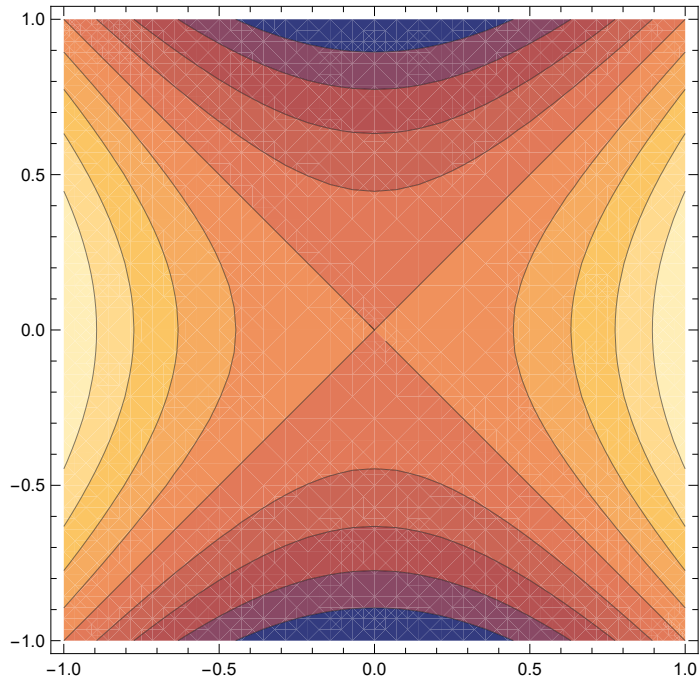
Out[]:=



Zadanie 4

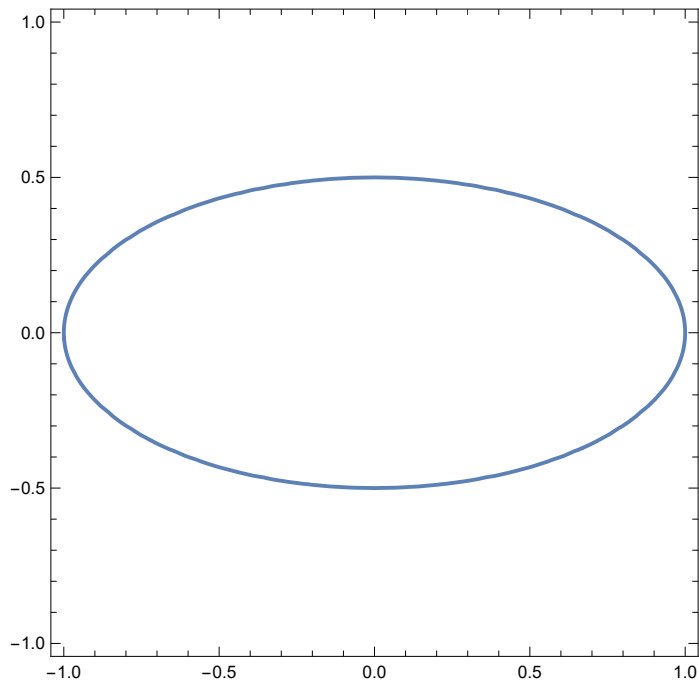
```
In[ ]:= ContourPlot[x2 - y2, {x, -1, 1}, {y, -1, 1}]
```

Out[]:=



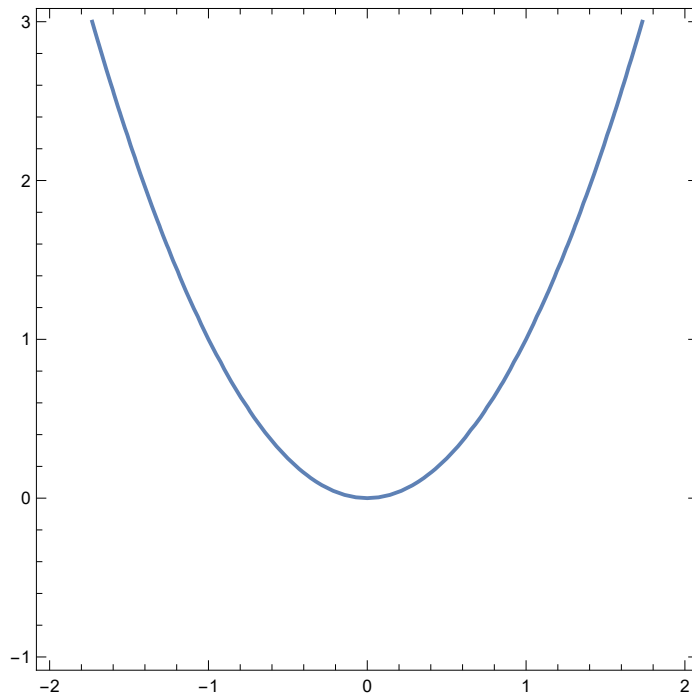
```
In[ ]:= ContourPlot[x2 + (2 y)2 == 1, {x, -1, 1}, {y, -1, 1}]
```

Out[]:=



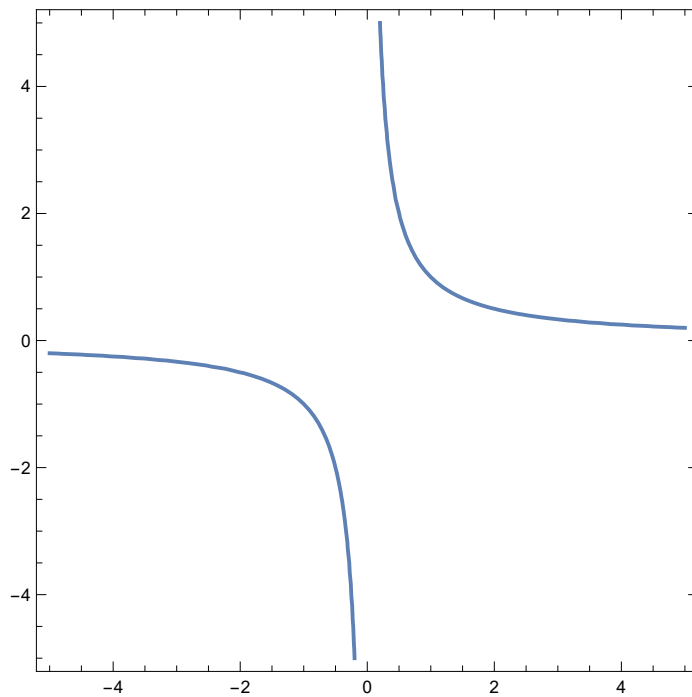
```
In[ ]:= ContourPlot[x^2 == y, {x, -2, 2}, {y, -1, 3}]
```

Out[]=



```
In[ ]:= ContourPlot[x y == 1, {x, -5, 5}, {y, -5, 5}]
```

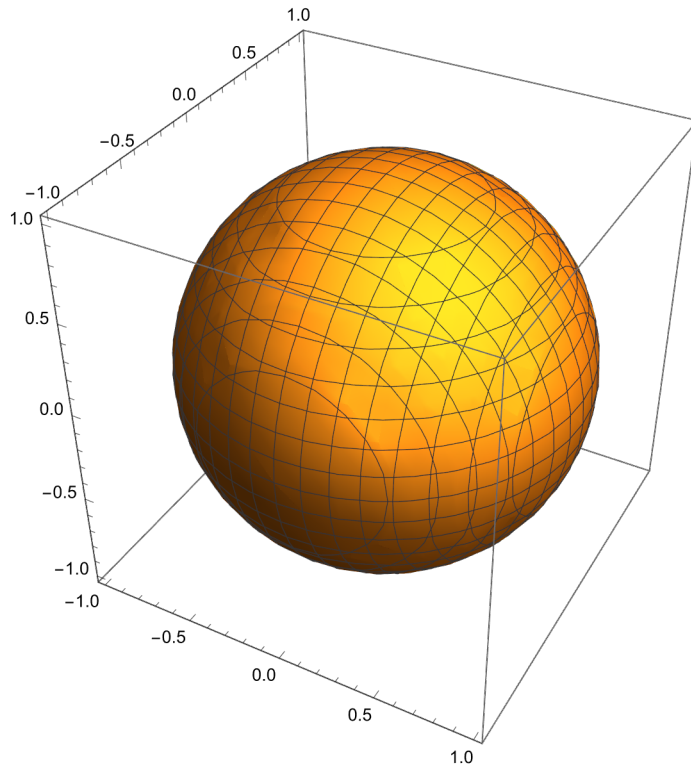
Out[]=



Zadanie 5

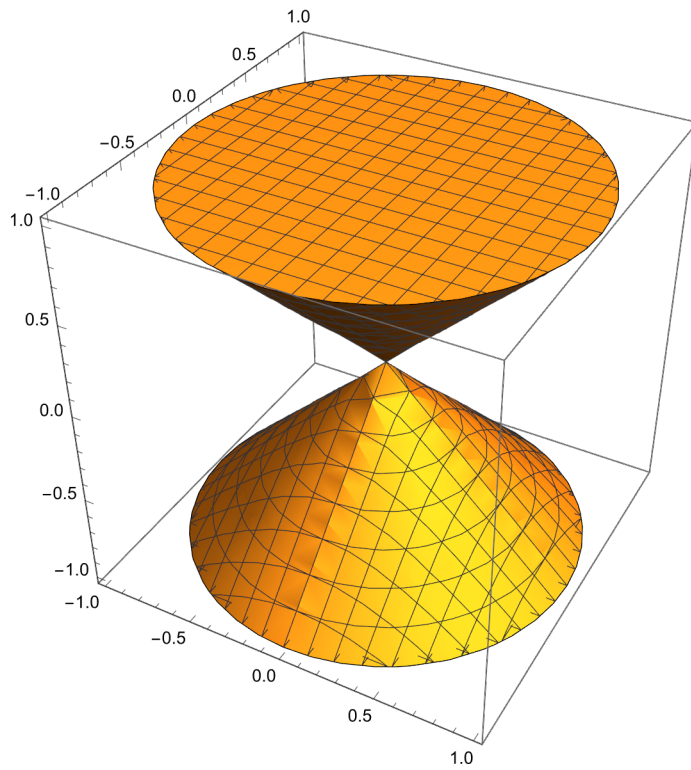
```
In[ ]:= RegionPlot3D[x2 + y2 + z2 ≤ 1, {x, -1, 1}, {y, -1, 1}, {z, -1, 1}]
```

Out[]=

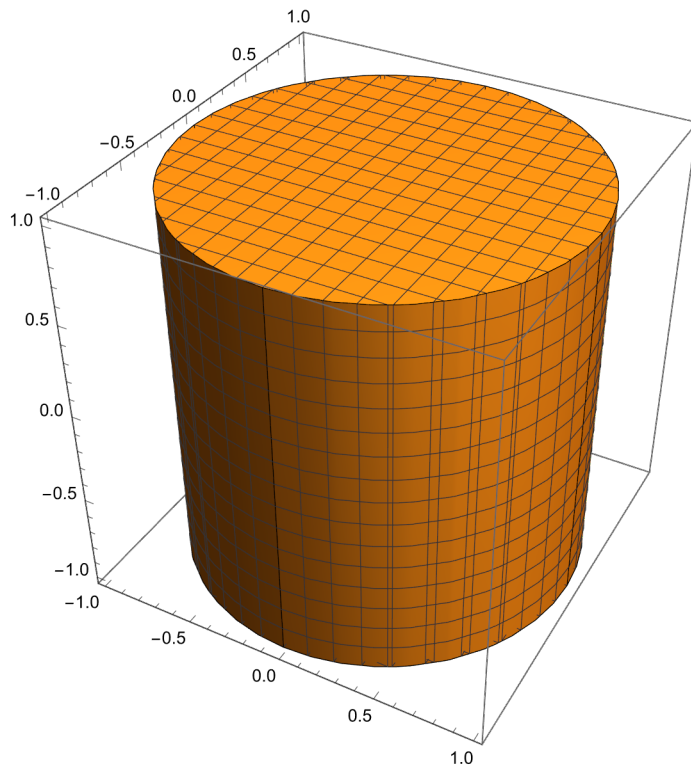


```
In[ ]:= RegionPlot3D[x2 + y2 ≤ z2, {x, -1, 1}, {y, -1, 1}, {z, -1, 1}]
```

Out[]=



```
In[ ]:= RegionPlot3D[x2 + y2 ≤ 1, {x, -1, 1}, {y, -1, 1}, {z, -1, 1}]  
Out[ ]=
```

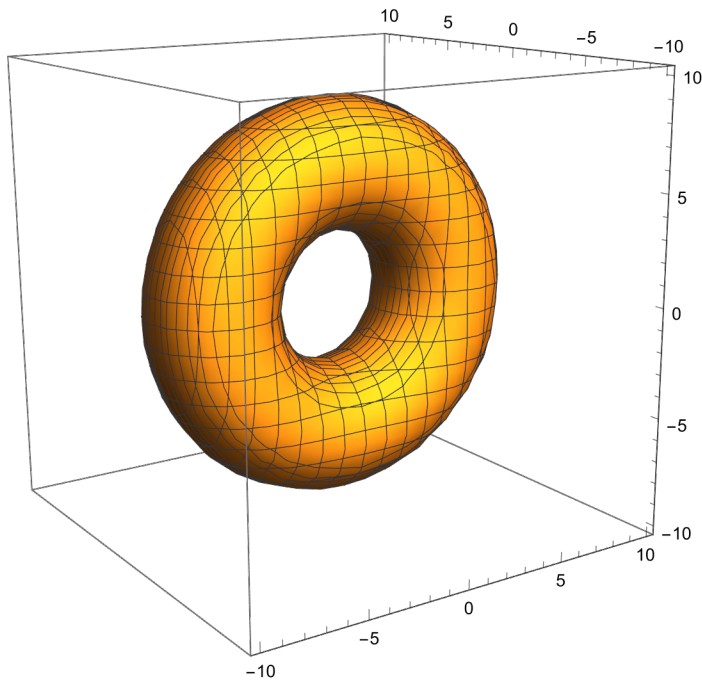


Zadanie 6

```
In[ ]:= torus[{R_, r_}, {x_, y_, z_}] := (x^2 + y^2 + z^2 + R^2 - r^2)^2 == 4 R^2 (x^2 + z^2);
```

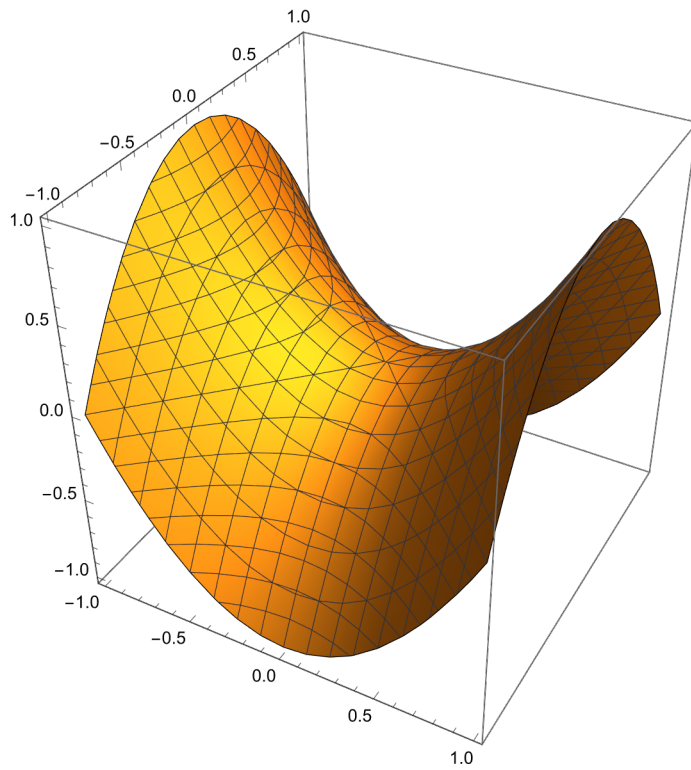
```
ContourPlot3D[
  Evaluate[torus[{6, 3}, {x, y, z}]],
  {x, -10, 10}, {y, -10, 10}, {z, -10, 10}
]
```

Out[]=



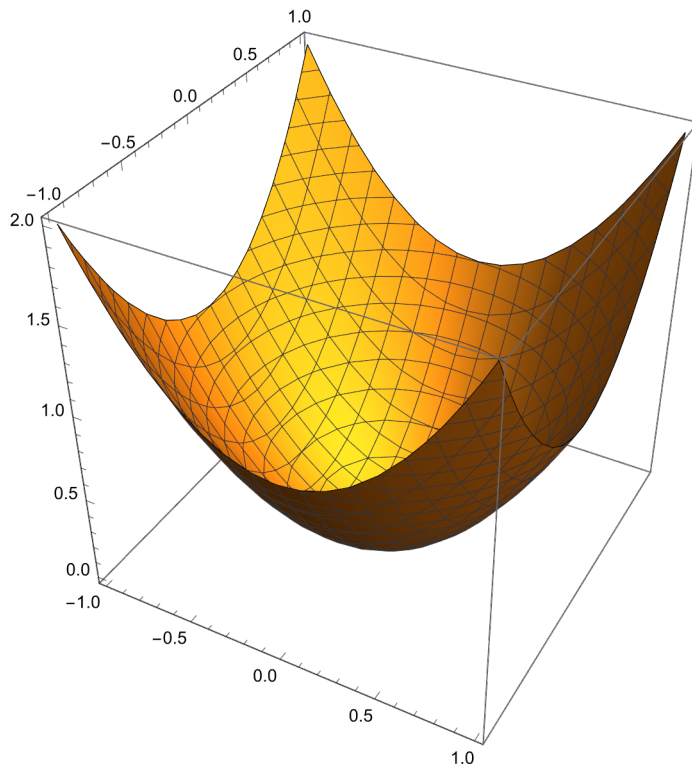
```
In[ ]:= ContourPlot3D[z == x2 - y2, {x, -1, 1}, {y, -1, 1}, {z, -1, 1}]
```

Out[]=



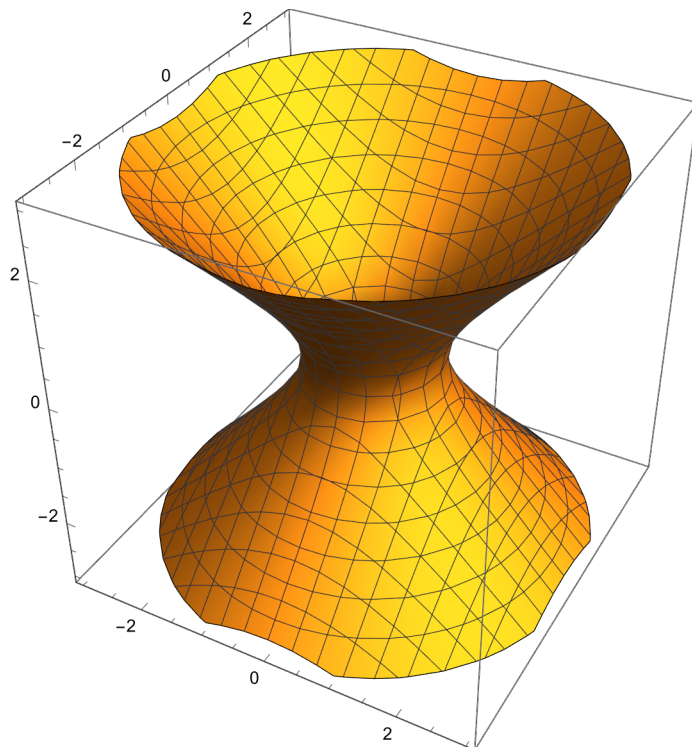
```
In[ ]:= ContourPlot3D[z == x2 + y2, {x, -1, 1}, {y, -1, 1}, {z, 0, 2}]
```

Out[]=



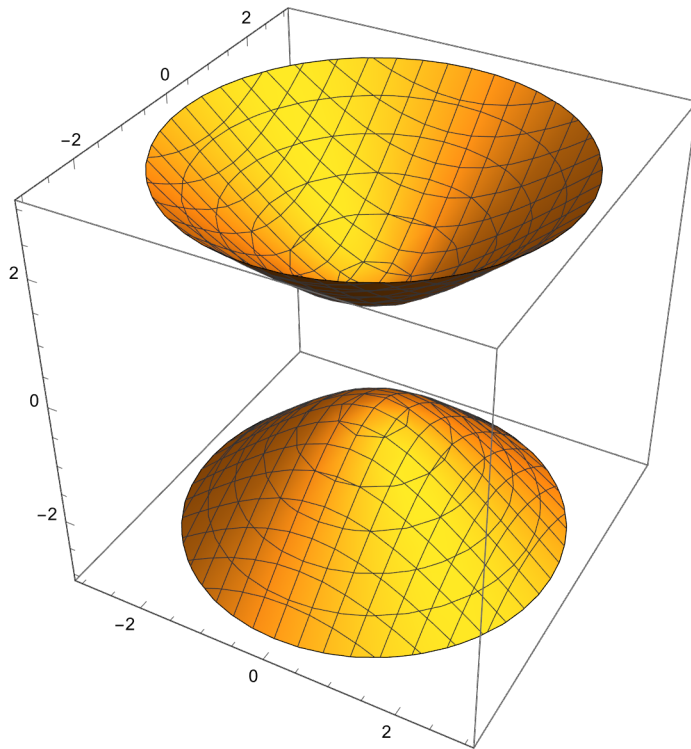
```
In[ ]:= ContourPlot3D[x2 + y2 - z2 == 1, {x, -3, 3}, {y, -3, 3}, {z, -3, 3}]
```

Out[]=




```
In[ ]:= ContourPlot3D[x2 + y2 - z2 == -1, {x, -3, 3}, {y, -3, 3}, {z, -3, 3}]
```

Out[]=



Zadanie 7

```
In[ ]:= ParametricPlot3D[{Sin[t], Cos[t], t/10}, {t, 0, 10  $\pi$ }
```

Out[]=

