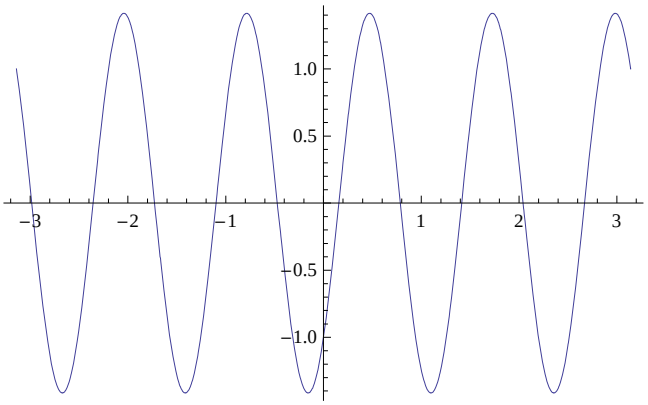
MATHEMATICA 6.0

EJERCICIO PROPUESTO 1

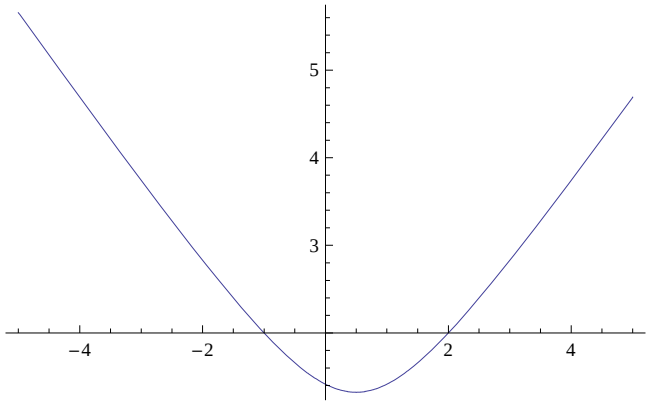
In[9]:=
```
Plot[Sin[5 x] - Cos[5 x], {x, -π, π}]
```

Out[9]=



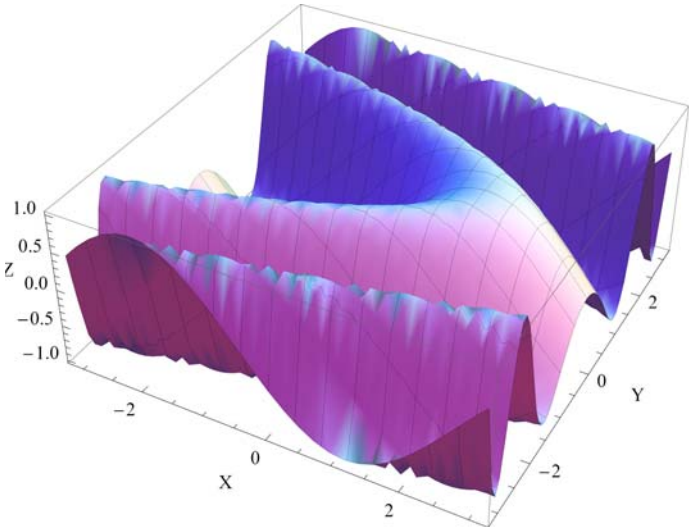
In[10]:=
```
Plot[√(x^2 - x + 2), {x, -5, 5}]
```

Out[10]=



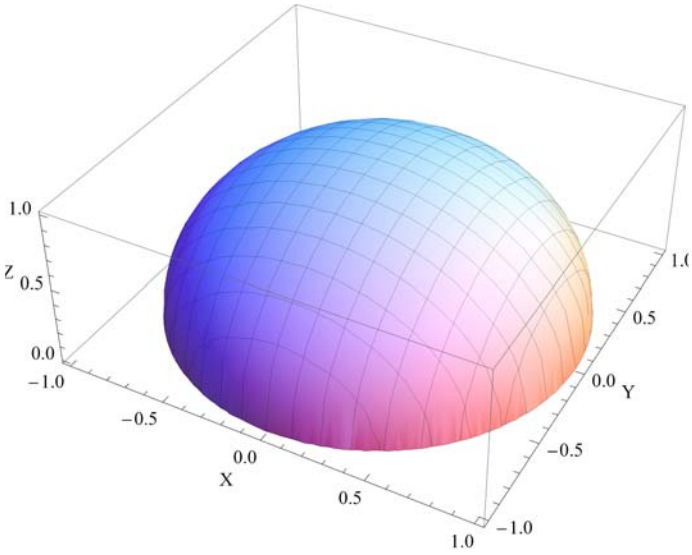
In[11]:=
```
Plot3D[Sin[x + y^2], {x, -π, π}, {y, -π, π}, AxesLabel → {"X", "Y", "Z"}]
```

Out[11]=



In[12]:=
```
Plot3D[Sqrt[1 - x^2 - y^2], {x, -1, 1}, {y, -1, 1}, AxesLabel → {"X", "Y", "Z"}]
```

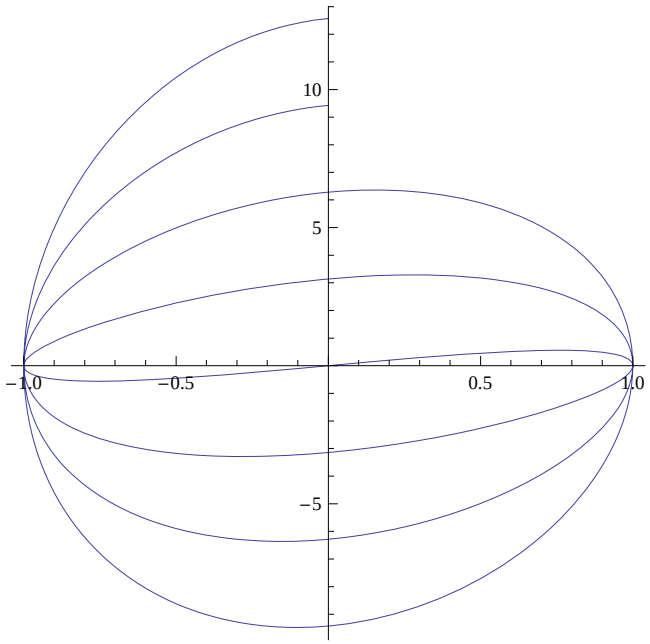
Out[12]=



EJERCICIO PROPUESTO 2

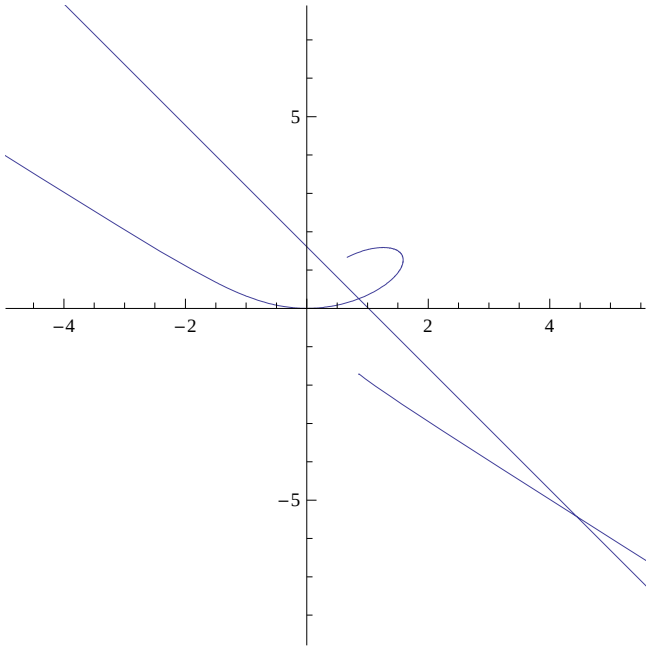
In[13]:=
```
ParametricPlot[{Sin[t], t Cos[t]}, {t, -3 π, 4 π}, AspectRatio → 1]
```

Out[13]=



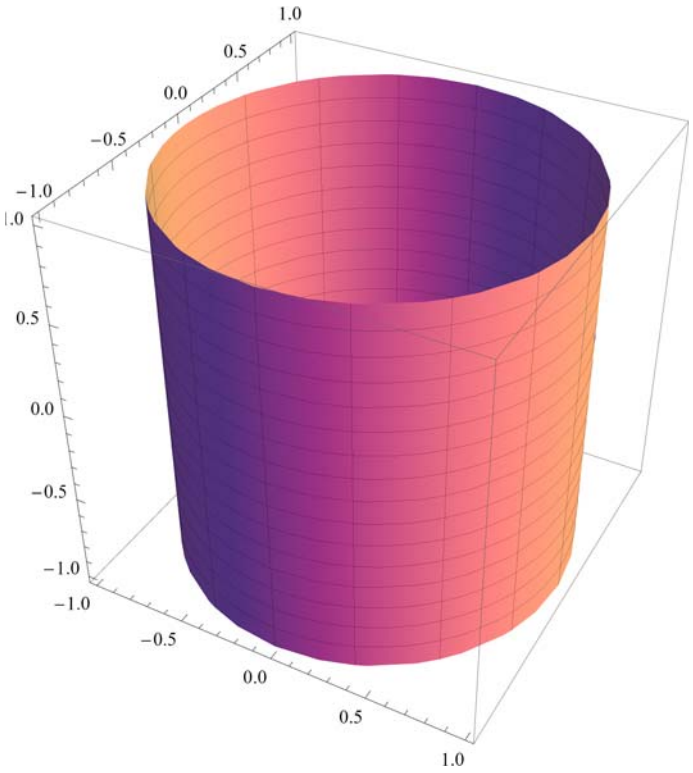
In[14]:=
```
ParametricPlot[{3 t/(1 + t^3), 3 t^2/(1 + t^3)}, {t, -2, 2}, AspectRatio → 1]
```

Out[14]=



In[15]:=
```
ParametricPlot3D[{Cos[u], Sin[u], v}, {u, -π, π}, {v, -1, 1}]
```

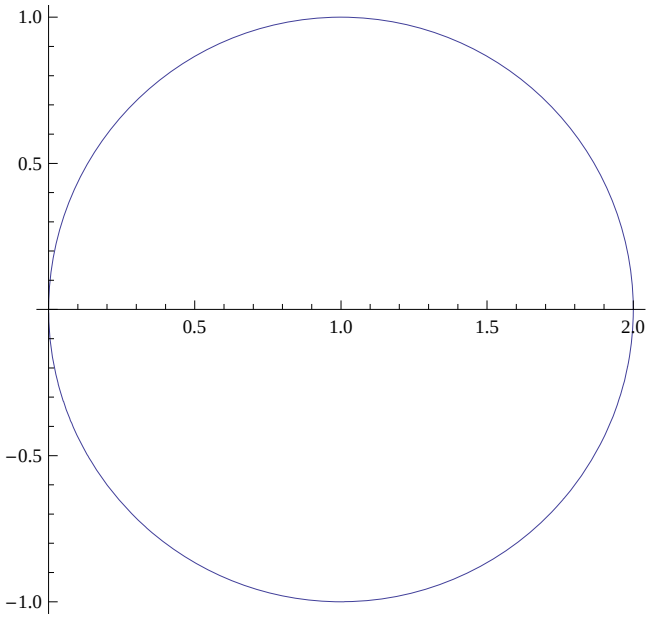
Out[15]=



EJERCICIO PROPUESTO 3

In[16]:=
```
PolarPlot[2 Cos[α], {α, 0, π}]
```

Out[16]=

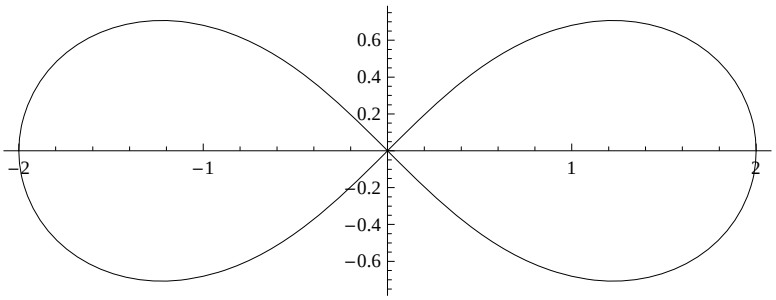


EJERCICIO PROPUESTO 4

In[5]:=
```
<< Graphics`ImplicitPlot`
```

In[7]:=
```
ImplicitPlot[(x^2 + y^2)^2 == 4 (x^2 - y^2), {x, -5, 5}]
```

Out[7]=



EJERCICIO PROPUESTO 5

In[17]:=
```
f[x_] := x^4 - 2 x^3 + 2 x - 3;
```

In[18]:=
```
rectatangente = Reduce[y - f[1] == f'[1] (x - 1)]
```

Out[18]=
```
y == -2
```

Recta tangente a la función en el punto

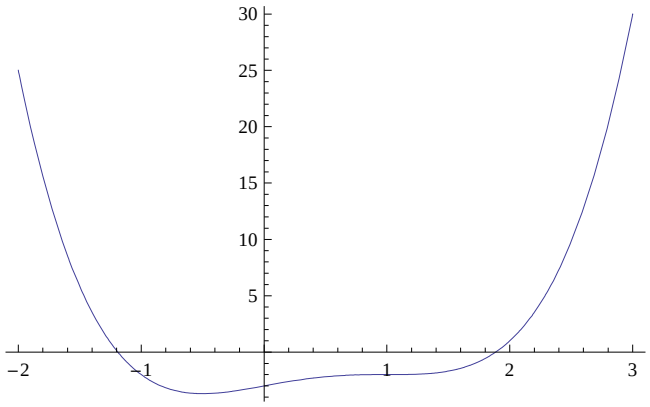
In[19]:=
```
rectanormal = Reduce[(y - f[1]) f'[1] == (x - 1)]
```

Out[19]=
```
x == 1
```

Recta normal a la función en el punto

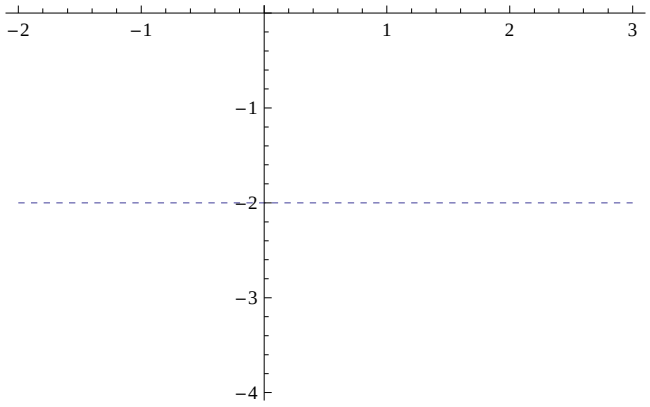
In[20]:=
```
funcion = Plot[x^4 - 2 x^3 + 2 x - 3, {x, -2, 3}]
```

Out[20]=



In[21]:=
```
tangente = Plot[-2, {x, -2, 3}, PlotStyle → Dashing[{0.01}]]
```

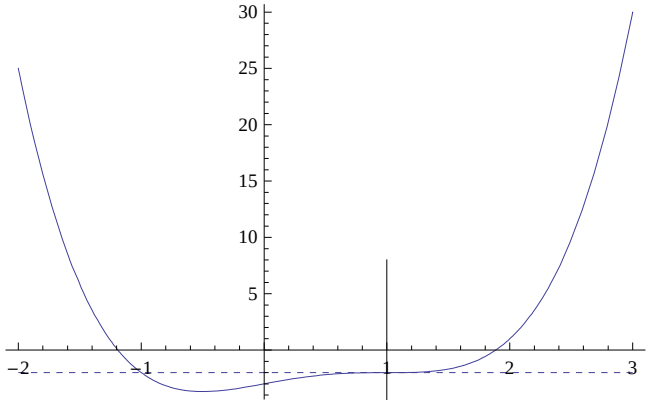
Out[21]=



In[22]:=
```
normal = Graphics[Line[{{1, -8}, {1, 8}}]];
```

In[23]:=
```
Show[funcion, tangente, normal]
```

Out[23]=



EJERCICIO PROPUESTO 6

In[24]:=
```
ContourPlot[x^2 + y^2, {x, -10, 10}, {y, -10, 10}]
```

Out[24]=