Implicitní funkce jedné promnných
Soubor: Impl_predn_2019

```
> restart;
> with(plots):
```

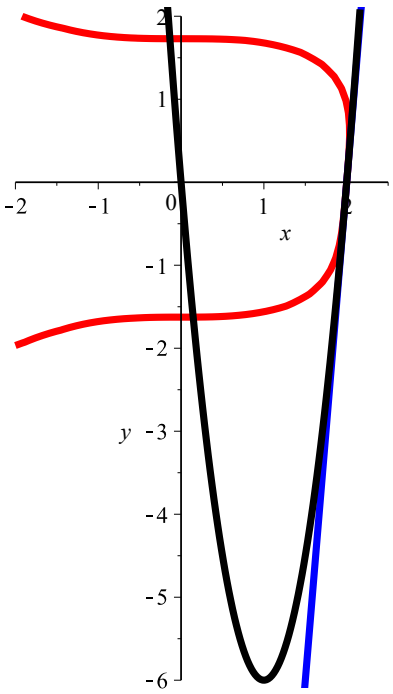
P.1. Kivka, tena, Taylorv polynom - grafy v okolí bodu A=[2,0]

```
> x^3 - sin(y) + y^4 - 8 = 0; y = 12*x - 24; Ta[2](x) = 12*x-24 + 6*(x-2)^2;
```

$$x^3 - \sin(y) + y^4 - 8 = 0$$

$$y = 12\,x - 24$$

$$Ta_2(x) = 12\,x - 24 + 6\,(x-2)^2 \qquad \textbf{(1)}$$



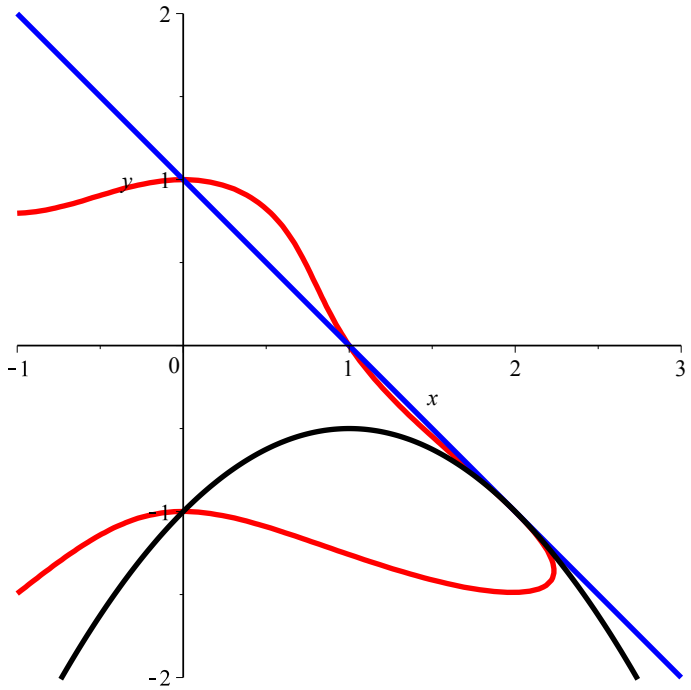
P 183 Sb. Kivka a její graf v okolí bodu A=[2,-1]

```
> x^3+y^4+2*x^2*y-1=0;y=-1-(x-2);T2(x)=-1-(x-2)-0.5*(x-2)^2;
```

$$x^3 + y^4 + 2\,x^2\,y - 1 = 0$$

$$y = 1 - x$$

$$T2(x) = 1 - x - 0.5\,(x-2)^2 \qquad \textbf{(2)}$$




```
>
```

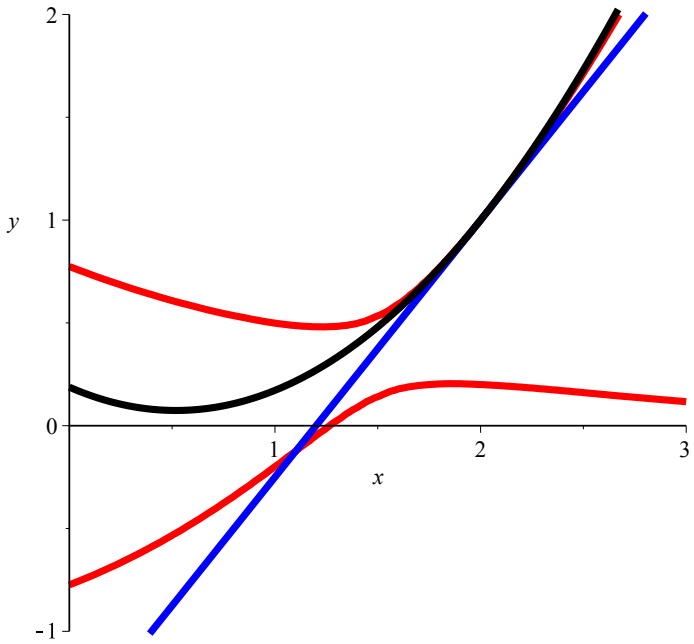
P.2. Kivka, tena,Taylorv polynom - grafy v okolí bodu A=[2,1]

```
> x^2+3*x^2*y-10*y^2-6*x+6=0;te=1+5*(x-2)/4;Te2(x)=1+5*(x-2)/4+27*
  (x-2)^2/64;
```

$$x^2 + 3\,x^2\,y - 10\,y^2 - 6\,x + 6 = 0$$

$$te = -\frac{3}{2} + \frac{5}{4}\,x$$

$$Te2(x) = -\frac{3}{2} + \frac{5}{4}\,x + \frac{27}{64}\,(x-2)^2 \qquad \textbf{(3)}$$



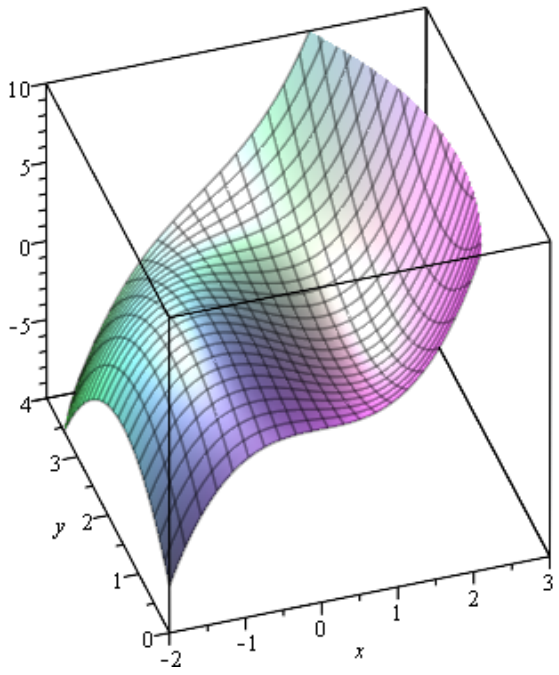

```
>
```

Pr 3: Graf funkce z=F(x,y)

```
> F:=x^3+x*y^2-3*x*y+1;
```

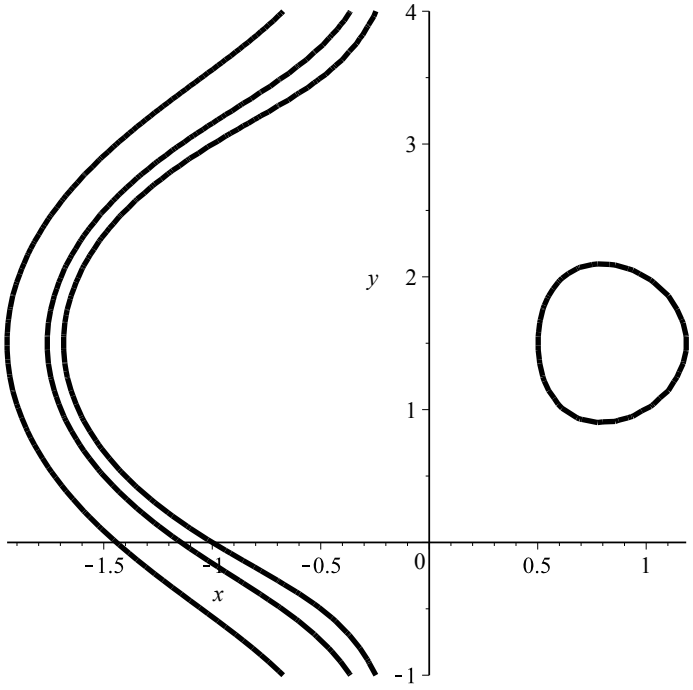
$$F := x^3 + x\,y^2 - 3\,x\,y + 1 \tag{4}$$

```
> plot3d(F,x=-2..3,y=0..4,view=-10..10,axes=boxed,orientation=
  [-108,52]);
```



Izokrivky (vrstevnice) F(x,y)=k pro k=-2, -0.5, 0, 0.5, 1, 3

```
> contourplot(x^3 + x*y^2 - 3*x*y + 1, x=-2..2, y=-1..4, grid=[50, 50], thickness=3,
      color="black", contours=[-2, -0.5, 0])
```



Pr.1. Krivka, tecna, Taylorv polynom - grafy v okolí bodu A=[1,2]

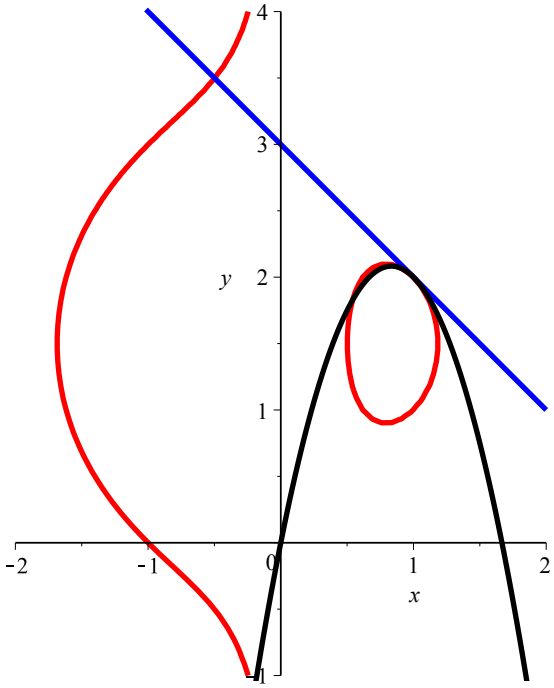
```
> x^3 + x*y^2 - 3*x*y + 1 = 0; y = 2 - (x - 1); T2(x) = 2 - (x - 1) - 3*(x - 1)^2;
```

$$x^3 + x y^2 - 3 x y + 1 = 0$$

$$y = 3 - x$$

$$T2(x) = 3 - x - 3\,(x-1)^2$$

(5)


4
3
y
2
1
-2
-1
0
1
2
x