Computergestuetzte Mathematik zur Analysis

Lektion 9 (17. Dezember)

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

ebene parametrische Plots

```
> po := plot(sqrt(1-x^2),x = -1 .. 1,color = coral,thickness=2);
  pu := plot(-sqrt(1-x^2), x = -1 .. 1, color = coral, thickness
  = 2);
  display([po, pu]);
> plot([[x, sqrt(1-(x+1)^2), x = -2 .. -1], [x, x^2, x = -1 .. 0]
  ],thickness=2);
> plot([sin(t), cos(t), t = 0 .. 2*Pi], color = red, thickness =
  2);
>
> plot([cos(3*t), sin(7*t), t = 0 .. 2*Pi], color = "DarkGreen",
  thickness = 2); #Lissajous-Figur
> Lis1 := [cos(7*t), sin(5*t), t = 0 .. 2*Pi];
> Lis2 := [cos(3*t), sin(7*t), t = 0 .. 2*Pi];
> plot([Lis1, Lis2], color = [green, red], thickness = 2);
> kreis := [cos,sin,0..2*Pi];
> w := seq([cos(2*Pi*j/5), sin(2*Pi*j/5)], j = 0 .. 5);
> Pentagram := [seq(w[k], k = 1 .. 6)];
> plot([kreis, Pentagram], thickness = 2, scaling = constrained,
  axes='none');
> Stern := seq([[0, 0], w[k]], k = 1 .. 5);
> plot([kreis, Pentagram, Stern], thickness = 2, scaling =
  constrained, axes = 'none');
> Pentagram2 := [seq(w[2*k mod 5+1], k = 1 .. 6)];
> plot([kreis,Pentagram2], thickness = 2, scaling = constrained,
  axes='none');
> f1:= x-> (-x)^(3/2)*((3/2)^(sqrt(-x))-floor((3/2)^(sqrt(-x))));
> plot(f1(x),x=-19.7..0);
> p2:=plot([f1(x), -f1(x)],x=-19.7..0);
> display(p2);
> p3:=plot([f1(x),x+19.7,x=-19.7..0],thickness=4,color=green);  #
  Aufrichten des Weihnachtsbaums
> display(p3);
> p4:=plot([-f1(x),x+19.7,x=-19.7..0],thickness=4,color=green);
```

```
> p5:=plot([[-2,0],[-2,-3],[2,-3],[2,0]],thickness=4,color=brown)
  :
> display(p3,p4,p5,axes=none);
```