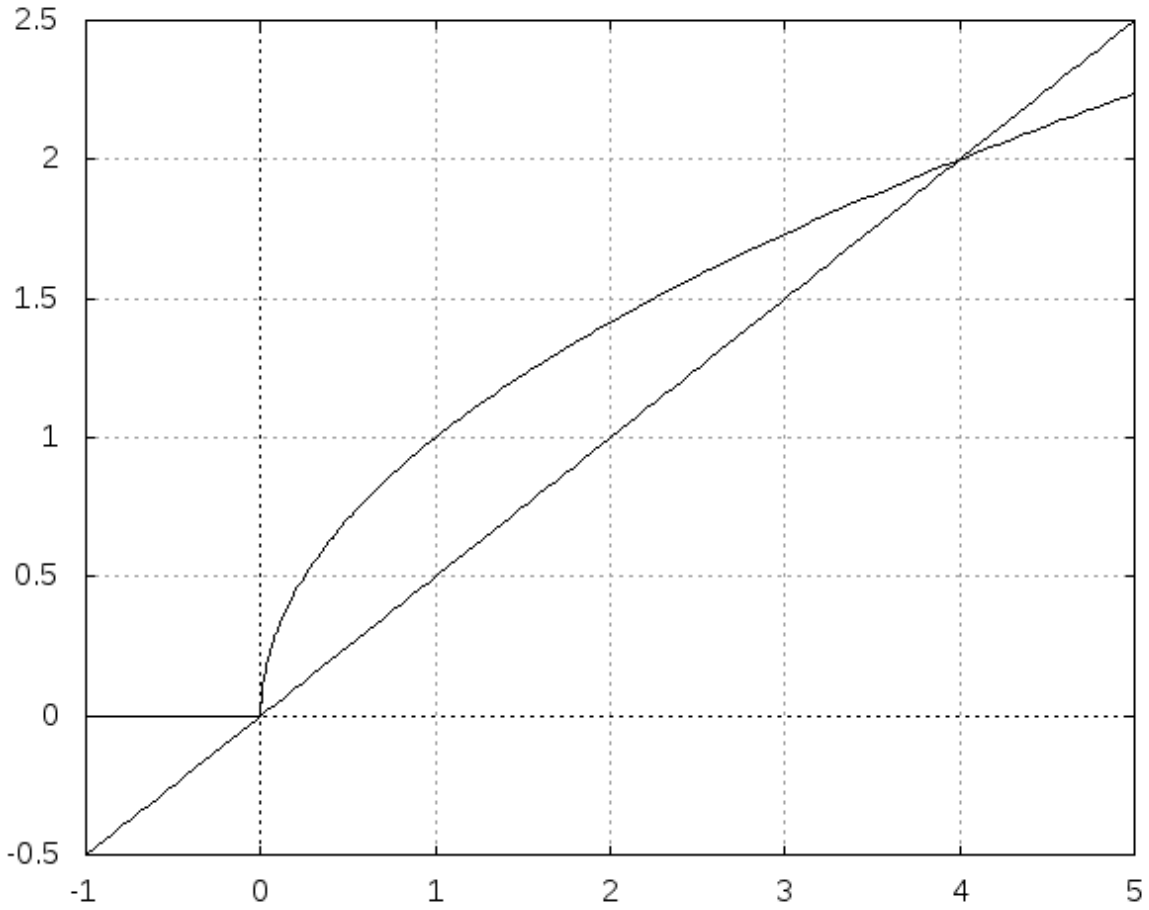
pyMaxima-Sitzung

22. September 2011, 07:23

```
(%i1) "LS, S. 234/Nr. 6a"$

(%i2) draw2d(explicit(0.5*x,x,-1,5),explicit(x^0.5,x,-1,5),xaxis = true,yaxis = true,grid =true)$
```




```
(%i3) "(1) Gleichsetzen"$

(%i4) find_root( x - 2* sqrt(x)=0,x,-10,10);
(%o4)                                0.0

(%i5) find_root( x - 2* sqrt(x)=0,x,-10,10);
(%o5)                                0.0

(%i6) "Lösungen: x=0 und x=4"$

(%i7) "(2) f(x) < g(x)?"$

(%i8) f(x) := 0.5*x;
(%o8)                          f(x) := 0.5 x

(%i9) g(x) := x^0.5;
                                      0.5
```

```
(%o9)                          g(x) := x

(%i10) f(2);
(%o10)                              1.0

(%i11) g(2);
(%o11)                      1.414213562373095

(%i12) "Also g(x) > f(x) auf I = [0;4]"$

(%i13) "(3) Berechne Rotationsintegral"$

(%i14) Fl_01 : integrate( %pi * (x^0.5)^2,x,0,4);
(%o14)                               8 %pi

(%i15) Fl_02 : integrate( %pi * (0.5*x)^2,x,0,4);
(%o15)                     5.333333333333333 %pi

(%i16) ergebnis : Fl_01 - Fl_02;
(%o16)                     2.666666666666667 %pi

(%i17) ev(%,numer);
(%o17)                      8.377580409572783

(%i18) "Ergebnis: V = 8/3 %pi"$
```