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> |Zkusime si znazornit Fourierovu radu pro funkci f(x)=sign(x) ,
  kterou jsme zde uz pocitali.
> restart;
> with(plots):
> with(plottools):
> funk:=x-> piecewise(x<0,-1,x>0,1);
      funk := x → piecewise(x < 0, -1, 0 < x, 1)
> a:=n->int(-cos(n*x),x=-Pi..0)/Pi+int(cos(n*x),x=0..Pi)/Pi;
>
      a := n →  $\frac{1}{\pi} \int_{-\pi}^0 -\cos(nx) dx + \frac{1}{\pi} \int_0^{\pi} \cos(nx) dx$ 
> aa:=seq(a(n),n=1..20):
> b:=n->int(-sin(n*x),x=-Pi..0)/Pi+int(sin(n*x),x=0..Pi)/Pi;
      b := n →  $\frac{1}{\pi} \int_{-\pi}^0 -\sin(nx) dx + \frac{1}{\pi} \int_0^{\pi} \sin(nx) dx$ 
> ba:=seq(b(n),n=1..20):
> aaa:=n->aa[n]:
> baa:=n->ba[n]:
> f:= plot(funk(x),x=-4..4,discont=true):
> fur:=seq(plot(a(0)/2 +sum(a(n)*cos(n*x)
  +b(n)*sin(n*x),n=1..m),x=-Pi .. Pi),m=0..10):
> fura:=display(fur,insequence=true):
> display(f,fura);

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