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> # How to plot an impulse train.
# The adjustment width h should be chosen for visual effect.
> f:=x->2*sin(2*Pi*x) + 5*sin(2*Pi*6*x) + 9*sin(2*Pi*11*x);
      f:=x→2 sin(2 π x) + 5 sin(12 π x) + 9 sin(22 π x)

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(1)

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> Fw:=inttrans[fourier](f(x),x,w);h:='h';
Fw:=Iπ (-2 Dirac(w-2 π) + 5 Dirac(w+12 π) - 9 Dirac(w-22 π) - 5 Dirac(w
-12 π) + 9 Dirac(w+22 π) + 2 Dirac(w+2 π))
      h:=h

```

(2)

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> ApproxDirac:=x->(1/2/h)*(piecewise(x+h<0,0,1)-piecewise(x-h<0,0,
1));
ApproxDirac:=x→ $\frac{1}{2} \frac{\text{piecewise}(x+h < 0, 0, 1) - \text{piecewise}(x-h < 0, 0, 1)}{h}$ 

```

(3)

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> F:=subs(Dirac=ApproxDirac,Fw);
F:=Iπ (-2 ApproxDirac(w-2 π) + 5 ApproxDirac(w+12 π)
-9 ApproxDirac(w-22 π) - 5 ApproxDirac(w-12 π) + 9 ApproxDirac(w
+22 π) + 2 ApproxDirac(w+2 π))

```

(4)

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> F:=F/I:
> h:=0.8:plot(F,w=-23*Pi..23*Pi);

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