6. Random Population Search

```
using Winston
```

In [2]:
```
addprocs(2)
```

In [3]: `2-element Array{Any,1}:`

Out [3]:
```
 2
 3
```

```
using Distributions
```

In [5]:

In [6]:
```
x=[-100:0.1:100]
@everywhere f(x)=cos(x)./(1+0.01*x.^2)
plot(x,f(x))
```

Out [6]:
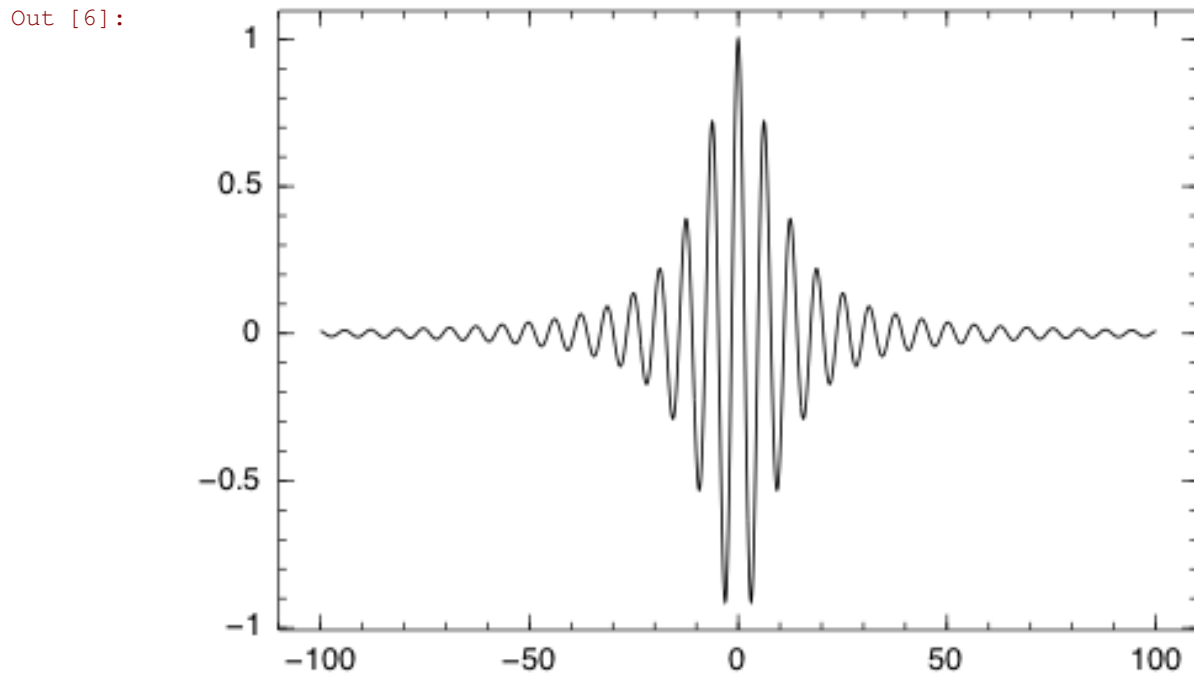
In [12]:
```
@time begin
psize=10000
population=rand(Distributions.Uniform(-100,100),psize)
fitness=f(population)
order=sortperm(fitness)
for i=1:1000
    [population[order[j]]+=rand(Distributions.Normal(0,(psize+1-j))) for j=1:(psize-1)
    fitness=f(population)
    order=sortperm(fitness)
```

```
    end
    fitness[order[psize]]
    end
elapsed time: 13.953904861 seconds (3152793424 bytes allocated)
0.9999896089908947
```

```
@time begin
@everywhere psize=10000
@everywhere population=rand(Distributions.Uniform(-100,100),psize)
@everywhere fitness=f(population)
@everywhere order=sortperm(fitness)
for i=1:1000
    @parallel [population[order[j]]+=rand(Distributions.Normal(0,(psize+1-j))) for j=1
    fitness=f(population)
    order=sortperm(fitness)
end
fitness[order[psize]]
end
elapsed time: 9.981343555 seconds (770650916 bytes allocated)
0.9998463776259436
```