

```

      .-\| \|^/ | Maple 6 (SUN SPARC SOLARIS)
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      |         Waterloo Maple Inc.
      |         Type ? for help.
> plotsetup(cps,plotoutput='/tmp/webmaple36080.d/webm.ps',plotoptions='portrait,
noborder');
> with(plots):# For display
Warning, the name changecoords has been redefined
# Assignment #1 by Joe Web User
#1
> 100!;
9332621544394415268169923885626670049071596826438162146859296389521759999322\
 991560894146397615651828625369792082722375825118521091686400000000000000\
 0000000000

#2
> evalf(sqrt(5),30);
                2.23606797749978969640917366873

#3
> e_to_the_pi:=evalf(exp(Pi));pi_to_the_e:=evalf(Pi^exp(1));
                e_to_the_pi := 23.14069264
                pi_to_the_e := 22.45915771

#e_to_the_pi is bigger
#4
# To find cos(Pi/8) we solve the half angle formula
> ans:=solve(x^2=(1+cos(Pi/4))/2);
bytes used=1003728, alloc=851812, time=0.46
                1/2 1/2                1/2 1/2
                ans := 1/2 (2 + 2 ) , - 1/2 (2 + 2 )

> cos(Pi/8):=ans[1];
                1/2 1/2
                cos(1/8 Pi) := 1/2 (2 + 2 )

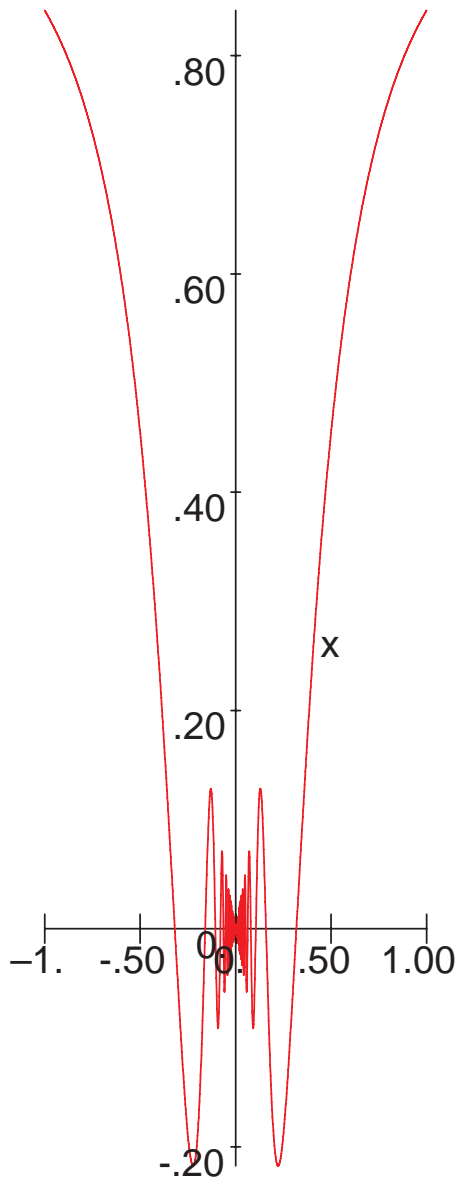
# Now we can find cos(Pi/16)
> ans:=solve(x^2=(1+cos(Pi/8))/2);
                1/2 1/2 1/2                1/2 1/2 1/2
                ans := 1/2 (2 + (2 + 2 ) ) , - 1/2 (2 + (2 + 2 ) )

> cos(Pi/16):=ans[1];
                1/2 1/2 1/2
                cos(1/16 Pi) := 1/2 (2 + (2 + 2 ) )

#5
> plot1:=plot(x*sin(1/x),x=-1..1,title="domain [-1, 1]",
> numpoints=1000):# note the colon
bytes used=2267312, alloc=1769148, time=1.13
> plot2:=plot(x*sin(1/x),x=-1/10..1/10,title="domain [-0.1, 0.1]",
> numpoints=1000):# again the colon
bytes used=3283540, alloc=2489912, time=1.87
> display(array([plot1,plot2]));
bytes used=4284132, alloc=2817532, time=2.56
bytes used=5285044, alloc=2817532, time=3.27
bytes used=6285488, alloc=2817532, time=3.93
> quit
bytes used=6976860, alloc=2883056, time=4.46

```

domain  $[-1, 1]$



domain  $[-0.1, 0.1]$

