

## A brief introduction to Maple software

Maple is one of several computer algebra systems that is available to help solve mathematical problems. Whitman College has a license for this program and it is available on the computers in the Olin Hall math labs.

If you have an account in the math lab, then you may have already used Maple in one or more of your courses. If not, you can use the username “maple” with the password “cauchy” to log in to any of the computers in Olin 207. Open a command window and type “xmaple”. A Maple window will open and you can try the commands illustrated here and see the results for yourself. To exit Maple, hit Alt F4. You can then log off of the computer.

Some sample commands are given below. The words following the # symbol are merely comments about what is taking place. Since this is a computer program, all the symbols are important, including the semicolon at the end of each expression. You will get an error message if you mistype something. Click on the link [Maple output](#) to see the result of the commands.

```
with(plots): # inputs some special commands
f:=x->2*sin(x)+3; # defines a specific function
plot(f(x),x=0..4*Pi,y=0..5); # plots the function, default color is red
p1:=plot(8*x-x^2,x=0..8,color=green): # defines a plot of a parabola
p2:=plot(2*x,x=0..8,color=blue): # defines a plot of a line
display({p1,p2}); # displays both plots on the same graph
int(x^4/sqrt(9+x^2),x); # finds an indefinite integral
int((2*x+3)/(4+x^2),x=0..2); # evaluates a definite integral
evalf(sqrt(13)+ln(7)); # finds a decimal approximation for a number
solve(x^2+4*x-13=0,x); # finds the exact solutions to an equation
fsolve(x^3+4*x-13=0,x); # gives approximate solutions to an equation
with(combinat): # inputs some special commands
for i from 1 to 10 do print(i,fibonacci(i)); od; # prints out 10 Fibonacci numbers
sum(fibonacci(3*k),k=1..5); # finds the sum of some Fibonacci numbers
```