LaTeX Exercise 1

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1 - Using LaTeX

LaTeX is a logical typesetting language so headings such as the one just above should be put in with LaTeX commands. The same applies to lists like the one in section 2. The LaTeX referencing system is very powerful and you should use it where possible. It saves a lot of time in the long run.

2 - Mathematics in LaTeX

Here are three important properties of the complex numbers C.

(1) If z is a complex number then —z—=1 if and only if z lies on the unit circle in the complex plane.

(2) If z=x+iy and w=u+iv then wz= (xu-yv) + i(xv+yu).

(3) Every polynomial with complex coefficients has a solution in the complex numbers. This is called the "Fundamental theorem of Algebra".

(4) The exponential function can be defined on complex numbers and
exp(i theta) = cos theta + i sin theta.
So, in particular,
i pi e = -1.