

1 Sage Tutorial Example

This was used to make the document build

```
1+1
var('a,b,c')
eqn = [a+b*c==1, b-a*c==0, a+b==5]
s = solve(eqn, a,b,c)
```

Solutions of eqn = ??:

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2 Calling Maxima From Sage

2.1 First Block Of Sage and Maxima Code

NOTE: THE LATEX OF THE VARIABLE NAMES IS NOT BEING TRANSFERRED TO SAGE

```
maxima('load("/home/fraser/projects/Math/maxima/cmt_struct_sage_test_102.mac")')

% vinfo_ch01_name = maxima.get("vinfo_ch01@name")
finfo_pvz_name = maxima.get("finfo_Pv_z@name")
finfo_pdz_name = maxima.get("finfo_Pdz_z@name")

% vinfo_ch01_latex_math = maxima.get("assoc('math,vinfo_ch01@latex)")
% vinfo_ch01_latex_text = maxima.get("assoc('text,vinfo_ch01@latex)")

finfo_pvz_latex = maxima.get("finfo_Pv_z@latex")
finfo_pdz_latex = maxima.get("finfo_Pdz_z@latex")

% vch01_ltx_math_rep = vinfo_ch01_latex_math.replace("\\\\", "\\").replace('\\"', '')
% vch01_ltx_text_rep = vinfo_ch01_latex_text.replace("\\\\", "\\").replace('\\"', '')

fpvz_ltx_rep = finfo_pvz_latex.replace("\\\\", "\\").replace('\\"', '')
fpdz_ltx_rep = finfo_pdz_latex.replace("\\\\", "\\").replace('\\"', '')

% vc01_name_str = 'P_{\scriptscriptstyle{[+1,s]}}'
```

2.2 Equations From First Block Of Code

2.2.1 Inline Math Mode

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2.2.2 Display Math Mode

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2.3 Testing Latex Syntax

This is Emphasized Font

3 Using Maxima Objects In Sage

This is normally unreliable in sage jupyter notebooks I have to convert the object to string with `ftl102.str()` and then use `replace()` to replace quotes. Quad backslashes are replaced with dual backslash instances. The string can then be used in `LatexExpr` in a jupyter notebook.

Note: You Don't Need To Use LatexExpr In SageTex !!!!

3.1 Second Block Of Sage and Maxima Code

```
ftl102=maxima("finfo_Pdz_z@latex")
str_ftl102=ftl102.str()
str_ftl102_rep = str_ftl102.replace("\\\\", "\\").replace("'", '')
```

3.2 Equation From Second Block Of Code

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4 Using More Strings From Maxima In Sage

4.1 Third Block Of Sage and Maxima Code

```
str_ftl103=maxima.get("finfo_Pdz_z@latex")
str_ftl103_rep = str_ftl103.replace("\\\\", "\\").replace("'", '')
% le_ftl103_rep = LatexExpr(str_ftl103_rep)
```

4.2 Equation From Third Block Of Code

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