

Maxima Chunk Test Document

Eric Stemmler

10/16/20

```
library(knitr)

source("maxima.R")
knit_engines$set(maxima = maxima)

set_tex_environment(":", " $$", " $$")$
load("mactex-utilities")$
f(x) := (x^2 + exp(x^2));
'f(2) = f(2);
J = jacobian([alpha / (alpha + beta), 1 / sqrt(alpha + beta)], [alpha, beta]);

f(x):=x^2+exp(x^2);
```

$$f(2) = e^4 + 4$$
$$J = \begin{pmatrix} \frac{1}{\beta + \alpha} - \frac{\alpha}{(\beta + \alpha)^2} & -\frac{\alpha}{(\beta + \alpha)^2} \\ -\frac{1}{2(\beta + \alpha)^{\frac{3}{2}}} & -\frac{1}{2(\beta + \alpha)^{\frac{3}{2}}} \end{pmatrix}$$

which can be simplified to

```
set_tex_environment(":", " $$", " $$")$
load("mactex-utilities")$
factor(determinant(jacobian([alpha / (alpha + beta), 1 / sqrt(alpha + beta)], [alpha, beta])));
```

$$-\frac{1}{2(\beta + \alpha)^{\frac{3}{2}}}$$