

Maxima Chunk Test Document

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library(knitr)

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

f(x) := (x^2 + exp(x^2));
'f(2) = f(2);
J = jacobian([alpha / (alpha + beta), 1 / sqrt(alpha + beta)], [alpha, beta]);
det(J) = determinant(%);
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$$f(x) = e^{x^2} + x^2$$

$$f(2) = e^4 + 4$$

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

$$\det(J) = \det \mathbf{false}$$

which can be simplified to

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factor(determinant(jacobian([alpha / (alpha + beta), 1 / sqrt(alpha + beta)], [alpha, beta])));
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$$-\frac{1}{2(\beta + \alpha)^{\frac{5}{2}}}$$