

restart

Example 1: convert

$$\begin{aligned} eq &:= \frac{\exp(x)}{\exp(2x) + a} - b \operatorname{sech}\left(x + \frac{1}{2} \ln\left(\frac{1}{a}\right)\right) : \\ bb &:= \operatorname{solve}(eq, b); \\ &\frac{e^x}{\operatorname{sech}\left(x + \frac{1}{2} \ln\left(\frac{1}{a}\right)\right) (e^{2x} + a)} \end{aligned} \quad (1)$$

$$\begin{aligned} bb &:= \operatorname{convert}(bb, \exp) \\ &\frac{1}{2 \sqrt{\frac{1}{a}} a} \end{aligned} \quad (2)$$

$$\begin{aligned} eq2 &:= \operatorname{simplify}(\operatorname{subs}(b = bb, eq)) \\ &\frac{\frac{1}{2} \frac{2 e^x \sqrt{\frac{1}{a}} a \cosh\left(x + \frac{1}{2} \ln\left(\frac{1}{a}\right)\right) - e^{2x} - a}{\cosh\left(x + \frac{1}{2} \ln\left(\frac{1}{a}\right)\right) (e^{2x} + a) \sqrt{\frac{1}{a}} a}} \end{aligned} \quad (3)$$

$$\begin{aligned} &[\operatorname{convert}(eq2, \exp), 1] \\ &[0, 1] \end{aligned} \quad (4)$$

Example 2: evalc

$$\begin{aligned} eq &:= \exp(3 + 4I) + \sinh(x + 4t + I) : \\ \operatorname{Re}(eq), \operatorname{Im}(eq) & \\ &e^3 \cos(4) + \Re(\sinh(x + 4t + I)), e^3 \sin(4) + \Im(\sinh(x + 4t + I)) \end{aligned} \quad (5)$$

$$\begin{aligned} eq2 &:= \operatorname{evalc}(eq) \\ &e^3 \cos(4) + \sinh(x + 4t) \cos(1) + I (e^3 \sin(4) + \cosh(x + 4t) \sin(1)) \end{aligned} \quad (6)$$

$$\begin{aligned} \operatorname{remove}(has, eq2, I) & \\ &e^3 \cos(4) + \sinh(x + 4t) \cos(1) \end{aligned} \quad (7)$$

$$\begin{aligned} (-I) \operatorname{select}(has, eq2, I) & \\ &e^3 \sin(4) + \cosh(x + 4t) \sin(1) \end{aligned} \quad (8)$$

$$\begin{aligned} \operatorname{assume}(x, real), \operatorname{assume}(t, real); \\ eq & \\ &e^{3+4I} + \sinh(\tilde{x} + 4\tilde{t} + I) \end{aligned} \quad (9)$$

$$\begin{aligned} \operatorname{Re}(eq), \operatorname{Im}(eq) & \\ &e^3 \cos(4) + \sinh(\tilde{x} + 4\tilde{t}) \cos(1), e^3 \sin(4) + \cosh(\tilde{x} + 4\tilde{t}) \sin(1) \end{aligned} \quad (10)$$

$$\begin{aligned} \operatorname{unassign}(x, t); \\ eq & \\ &e^{3+4I} + \sinh(x + 4t + I) \end{aligned} \quad (11)$$

Example 3: LinearAlgebra

Example 4