

### EXAMPLE 6.2

#### Evaluation of the integral

$$C_p(T) := \begin{pmatrix} 36.155 - 0.511 \cdot 10^{-1} \cdot T + 2.215 \cdot 10^{-4} T^2 - 1.824 \cdot 10^{-7} T^3 + 4.899 \cdot 10^{-11} T^4 \\ 33.313 - 0.111 \cdot 10^{-1} \cdot T + 3.566 \cdot 10^{-4} T^2 - 3.762 \cdot 10^{-7} T^3 + 11.983 \cdot 10^{-11} T^4 \end{pmatrix}$$

$$y := \begin{pmatrix} 0.9 \\ 0.1 \end{pmatrix}$$

$$I := \int_{310}^{350} y \cdot C_p(T) \, dT = 1.574 \times 10^3$$