

```
[> restart
=> AA := array([ [2, 3], [1, 4] ])

AA :=  $\begin{bmatrix} 2 & 3 \\ 1 & 4 \end{bmatrix}$  (1)
```

```
[> with(linalg) :
=> MatExp := exponential(AA, t)

MatExp :=  $\begin{bmatrix} \frac{3}{4} e^t + \frac{1}{4} e^{5t} & \frac{3}{4} e^{5t} - \frac{3}{4} e^t \\ \frac{1}{4} e^{5t} - \frac{1}{4} e^t & \frac{1}{4} e^t + \frac{3}{4} e^{5t} \end{bmatrix}$  (2)
```

```
[> DerMatExp := map(diff, MatExp, t)

DerMatExp :=  $\begin{bmatrix} \frac{3}{4} e^t + \frac{5}{4} e^{5t} & \frac{15}{4} e^{5t} - \frac{3}{4} e^t \\ \frac{5}{4} e^{5t} - \frac{1}{4} e^t & \frac{1}{4} e^t + \frac{15}{4} e^{5t} \end{bmatrix}$  (3)
```

```
[> AAA := map(rcurry(eval, t=0'), DerMatExp)

AAA :=  $\begin{bmatrix} 2 & 3 \\ 1 & 4 \end{bmatrix}$  (4)
```