

Math 2605-M Quiz 11
15 Apr 10

Name: SOLUTIONS

1. (8 points) Compute e^{tA} , where $A = \begin{bmatrix} 4 & 3 \\ 0 & -2 \end{bmatrix}$
2. (2 points) Compute $\frac{d}{dt}e^{tA}$.

(for more detail, see the solution
to Quiz 11-c)

$$\textcircled{1} \quad e^{tA} = \begin{bmatrix} e^{4t} & \frac{1}{2}(e^{4t} - e^{-2t}) \\ 0 & e^{-2t} \end{bmatrix}$$

$$\textcircled{2} \quad \frac{d}{dt}e^{tA} = \begin{bmatrix} 4e^{4t} & \frac{1}{2}(2e^{4t} + e^{-2t}) \\ 0 & -2e^{-2t} \end{bmatrix}$$