

$$n! = \Gamma(n+1)$$

$$A! = \Gamma(A+1)$$

$$\int (x) = \frac{1}{x} \quad , \quad \int (A) = A^{-1}$$

$$A = \begin{bmatrix} 0 & -1 \\ 4 & 4 \end{bmatrix}, \quad J = \begin{bmatrix} 2 & 1 \\ 0 & 2 \end{bmatrix}$$

$$f(x) = \frac{1}{x}, \quad f'(x) = -\frac{1}{x^2}$$

$$f(J) = \begin{bmatrix} 1/2 & -1/4 \\ 0 & 1/2 \end{bmatrix}$$

$$f(x) = e^x, \quad f'(x) = e^x \Rightarrow f(J) = \begin{bmatrix} e^2 & e^2 \\ 0 & e^2 \end{bmatrix}$$

$$f(x) = \sin x, \quad f'(x) = \cos x \Rightarrow \sin(J) = \begin{bmatrix} \sin 2 & \cos 2 \\ 0 & \sin 2 \end{bmatrix}$$

$$f(x) = \log(x), \quad f'(x) = \frac{1}{x} \Rightarrow \log(J) = \begin{bmatrix} \log^2 & \frac{1}{2} \\ 0 & \log^2 \end{bmatrix}$$

