## 20 Lecture - MTH101

## Important Subjective

What is the derivative of $\ln (x)$ ?
Answer: The derivative of $\ln (x)$ is $1 / x$.

What is the derivative of $\mathrm{e}^{\wedge} \mathrm{x}$ ?
Answer: The derivative of $\mathrm{e}^{\wedge} \mathrm{x}$ is $\mathrm{e}^{\wedge} \mathrm{x}$.

What is the derivative of $\ln (u)$, where $u$ is a function of $x$ ?
Answer: The derivative of $\ln (u)$ is $u^{\prime} /(u)$.

What is the derivative of $e^{\wedge} u$, where $u$ is a function of $x$ ?
Answer: The derivative of $e^{\wedge} u$ is $e^{\wedge} u * u^{\prime}$.

What is the derivative of $\ln (a x)$, where $a$ is a constant?
Answer: The derivative of $\ln (a x)$ is $1 /(x \ln (a))$.

What is the derivative of $\mathrm{e}^{\wedge}(\mathbf{a x})$, where a is a constant?
Answer: The derivative of $\mathrm{e}^{\wedge}(\mathrm{ax})$ is $\mathrm{ae}^{\wedge}(\mathrm{ax})$.

What is the derivative of $\ln \left(x^{\wedge} \mathbf{n}\right)$, where $\mathbf{n}$ is a constant?
Answer: The derivative of $\ln \left(x^{\wedge} n\right)$ is $n / x$.

What is the derivative of $\mathrm{e}^{\wedge}(\mathrm{nx})$, where n is a constant?
Answer: The derivative of $\mathrm{e}^{\wedge}(\mathrm{nx})$ is $n \mathrm{e}^{\wedge}(\mathrm{nx})$.

What is the derivative of $\ln \left(\mathrm{e}^{\wedge} \mathrm{x}\right)$ ?
Answer: The derivative of $\ln \left(e^{\wedge} x\right)$ is 1 .

What is the derivative of $\mathrm{e}^{\wedge}(\ln (\mathrm{x}))$ ?
Answer: The derivative of $\mathrm{e}^{\wedge}(\ln (\mathrm{x}))$ is x .

