

HONOR 2201, CALCULUS FOR NON-SCIENCE MAJORS, FALL 2005

INSTRUCTOR: BO-HAE IM

〈 Properties of Exponential expression 〉

$$(1) a^x a^y = a^{x+y}$$

$$(2) \frac{a^x}{a^y} = a^{x-y}$$

$$(3) \frac{1}{a^x} = a^{-x}$$

$$(4) a^0 = 1$$

$$(5) a^x b^x = (ab)^x$$

$$(6) \frac{a^x}{b^x} = \left(\frac{a}{b}\right)^x$$

〈 Properties of Natural logarithm 〉

$$(1) \ln(AB) = (\ln A) + (\ln B)$$

$$(2) \ln\left(\frac{A}{B}\right) = \ln A - \ln B$$

$$(3) \ln 1 = 0$$

$$(4) \ln e = 1$$

$$(5) \ln(A^p) = p(\ln A)$$

$$(6) \ln(e^x) = x$$

$$(7) e^{\ln A} = A$$