

6.3 - Logarithmic Functions

6.3a

Graphs and limits of logarithmic functions

[illegible]

6.3b

Properties of logarithms

$$\log_b b^x = x$$

$$b^{\log_b x} = x$$

$$\log_b MN = \log_b M + \log_b N$$

$$\log_b \frac{M}{N} = \log_b M - \log_b N$$

$$\log_b M^r = r \log_b M$$

Change-of-base formula

$$\log_b x = \frac{\log_a x}{\log_a b}$$

6.3c

Exercises:

Find the limit

$$\lim_{x \rightarrow 2^-} \log_5 (8x - x^4)$$

$$\lim_{x \rightarrow \infty} [\ln(2 + x) - \ln(1 + x)]$$

6.3d

Exercise:

On what interval is the curve $y = 2e^x - e^{-3x}$ concave downward?

[illegible]