MATH 5B - Single Variable Calculus II — Spring 2019

§6.3 Logarithmic Functions

In-class Activity 6.3

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Activity 1:

(a) Sketch $f(x) = 2^x$ and $f^{-1}(x)$ on the same coordinate plane. Use: $x = -2, -1, 0, 1, 2$.

(b) Sketch $f(x) = \left(\frac{1}{2}\right)^x$ and $f^{-1}(x)$ on the same coordinate plane. Use: $x = -2, -1, 0, 1, 2$.

Activity 2:

Use the log properties to evaluate:

(a) $\log_4(2) + \log_4(32)$

(b) $\log_2(80) - \log_2(5)$

Activity 3:

Use the log properties to evaluate: $\lim_{x\to 0} \log_5\left(\sin^2(x)\right)$

Activity 4:

Find x if $\ln(x^2) = 2$. Solve this in two ways:

(a) By re-writing the log eq into an exp eq;

(b) By using the inverse properties and raising both sides by e

Activity 5:

Find x if $e^{5-3x} = 10$. Solve this in two ways:

(a) By re-writing the exp eq into a log eq;

(b) By using the inverse properties and applying $\ln()$ on both sides

Activity 6:

Sketch the graph of $y = \ln(x + 3) + 1$

Activity 7:

Use your calculator to approximate $\log_8(5)$ to the nearest *thousandths*.