King Fahd University of Petroleum and Minerals
Prep Year Mathematics
Math 004-Quiz#2A

Name: ID#: Sec#:

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1. Given $f(x) = 1 + \log_{\frac{1}{3}}(x+3)$.

   (a) Graph $f(x)$

   (b) Find the Domain and the Range of $f(x)$.

   (c) Find the Asymptote of $f(x)$.

   (d) Find the x- and y-intercept of $f(x)$.

2. Write $5\log_3 x - 8\log_9 y + \log_{\sqrt{3}} z$ as a logarithmic function with a base of 3. (Assume $x > 0$, $y > 0$, and $z > 0$).

3. If $\log 2 = x$ and $\log 3 = y$, then write $\log \frac{9}{25}$ in terms of x and y.

4. Find the value of $(\log_3 64)\left(\log_4 \sqrt{3}\right) - \left(\sqrt[3]{10}\right)^{-3\log 5}$

5. Solve the following equations:

   (a) $\frac{10^x - 10^{-x}}{2} = 20$

   (b) $\log(5x - 1) = 2 + \log(x - 2)$