1st Alternative Academic Work(AAW) for the 2nd Quarter
(posted on Oct. 14, 2013, Monday)

Name: _____   **Rating:** _____

Year and Section: _____   **Score:** _____

Solve the following problems by showing the solutions(as needed *) completely. Write all your answers and graphs on the graphing paper(s). Submission of this 1st AAW will be on or before November 4 – 6, 2013. **(55pts)**

1.) Let $f(x) = x^3 - 3x^2 - 10x + 24$. Find the following : **(20pts)**
   a.) Constant term
   b.) Coefficients
   c.) Leading coefficient
   d.) Degree of f(x)
   e.) Leading term
   f.) Factors of a_0
   g.) Factors of a_n
   h.) Possible rational zeros
   i.) Number of variations if f(x) *
   j.) Number of variations if f(-x) *
   k.) y-intercept
   l.) x-intercepts or zeros of f(x) *
   m.)factored form or linear and quadratic factors
   n.) end behavior
   o.) Domain
   p.) Range
   q.) Graph (4pts)

2.) If $(3 - i)$ is a root of $P(x) = 2x^3 - 13x^2 + 26x - 10$, find the remaining roots *. **(5pts)**

3.) Sketch the graph of $f(x) = 2^{(x-1)} + 3$ and $g(x) = 2^x$ (broken line-basis graph) in one cartesian plane then give all of the properties/observations/attributes (domain, range, x-intercept *, y-intercept *, horizontal asymptote, vertical asymptote, increasing or decreasing graph, one to one or not) of f(x). **(10pts)**

4.) Sketch the graph of $f(x) = -4 + \log_2 (x+3)$ and $g(x) = \log_2 x$ (broken line-basis graph) in one cartesian plane then give all of the properties/observations/attributes(domain, range, x-intercept *, y-intercept *, horizontal asymptote, vertical asymptote, increasing or decreasing graph, one to one or not) of f(x). **(10pts)**

5.) Express $\left(\dfrac{2}{3}\right)^{-3} = \dfrac{27}{8}$ in logarithmic form. **(2pts)**

6.) Express $\log_4 \left(\dfrac{1}{64}\right) = -3$ in exponential form. **(3pts)**

7.) Express $\log_b \dfrac{x^2 y^3}{z^4}$ in expanded form *. **(5pts)**

Ricky V. Baluca MAth 2013