

MATH 1513 – College Algebra  
Quiz 8

Name:

Instructions: Show all work. Answers with no work shown will receive no credit.

1. Find the zeroes of the third-degree polynomial,  $f(x) = 4x^3 + 16x^2 + 11x - 3$ , then rewrite  $f(x)$  as a product of its linear factors.

2. Suppose that a polynomial function of degree 5 with rational coefficients has  $x = -3 - 3i$ ,  $x = 2 + \sqrt{13}$ , and  $x = 6$  as three of its zeroes. Determine any remaining zeroes.

3. Consider the function  $f(x) = \sqrt[3]{x+2} + 3$ .

a.) Using the definition, prove that  $f$  is a one-to-one function.

b.) Find a formula for the inverse,  $f^{-1}(x)$ .

4. Rewrite the equation  $\log_8 m = t$  as an exponential equation.