

Name \_\_\_\_\_ Student No. \_\_\_\_\_ G \_\_\_\_/\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_  
Nickname: \_\_\_\_\_ Quiz No.: \_\_\_\_\_

## Graphing Polynomial

**A. Give the possible roots (RRT), nature of roots (DRS), number of roots (FTA), factored form, actual roots, end behavior and graph of the given polynomial.**

1)  $f(x) = x^5 + x^4 - 9x^3 - 13x^2 + 8x + 12$

FTA: Atmost 5

Possible Roots: {1.0, 2.0, 3.0, 4.0, 6.0, 12.0}

Factored form:  $(x - 3)(x - 1)(x + 1)(x + 2)^2$

Actual roots: -2 mul. 2, -1, 1, 3

End Behavior:

$$f(x) \rightarrow -\infty \text{ as } x \rightarrow -\infty$$

$$f(x) \rightarrow \infty \text{ as } x \rightarrow \infty$$

Graph: