

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)  $f(x) = -x^4 - 2x^3 + 8x^2 + 18x + 9$

FTA: Atmost 4

Possible Roots:  $\{1, 3, 9\}$

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

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

End Behavior:

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

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

Graph: