

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)  $f(x) = x^4 + 8x^3 + 24x^2 + 32x + 16$

FTA: Atmost 4

Possible Roots:  $\{1.0, 2.0, 4.0, 8.0, 16.0\}$

Factored form:  $(x + 2)^4$

Actual roots: -2 mul. 4

End Behavior:

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

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

Graph: