

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

## Graphing Polynomial

**A. Identify the properties of the given polynomial equation then sketch its graph.**

1)  $f(x) = -x^3 - 7x^2 - 15x - 9$

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

FTA: Atmost 3  
 Factored form:  $-(x+1)(x+3)^2$   
 Actual roots: -3 mul. 2, -1  
 End Behavior:

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

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

Graph:

FTA: Atmost 4  
 Factored form:  $-(x-1)^2(x+2)^2$   
 Actual roots: -2 mul. 2, 1 mul. 2  
 End Behavior:

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

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

Graph:

