

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

2)  $f(x) = -x^4 - 9x^3 - 29x^2 - 39x - 18$

FTA: Atmost 3

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

Actual roots: -2 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:  $-(x+1)(x+2)(x+3)^2$

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

End Behavior:

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

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

Graph:

