

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

2)  $f(x) = x^4 - 4x^3 - x^2 + 16x - 12$

FTA:  
Factored form:  
Actual roots:  
End Behavior:

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Graph:

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Solve the given problems and show your complete solution (3 points each).

1. When  $x^4 + Rx^3 + Px^2 - 32x + 64$  is divided by  $x - 1$ , the remainder is 45. When divided by  $x - 4$ , the remainder is 0. Find  $R$  and  $P$ .

2. Find the height of a triangular-based pyramid, including the length and altitude of the base if the volume of the pyramid is 36 cubic feet and the length of the base is 3 less than twice the height and the altitude is 2 less than the height.



3. A ball was thrown upward with initial velocity of  $20\text{m/s}$  from the ground. If the acceleration of gravity is  $10\text{m/s}^2$ ,
  - a. what is the maximum height?
  - b. after how many seconds will it reach the height of 15m?
4. A class trip with a fixed cost of \$6000 will be evenly divided to the number of attendees. If there had been 10 more attendees, the cost per attendee would be \$30 less. How many joined the trip?