

Pre-Calculus  
Chapter 2 Quiz 2, Version A

Name: Key Period:  
Date:

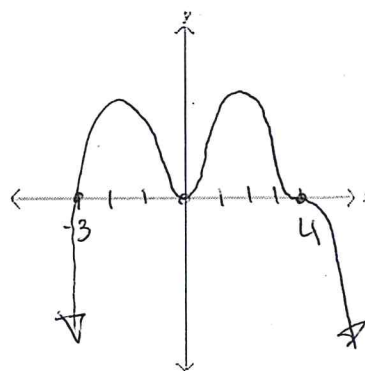
1. Sketch the graph of the polynomial  $y = -x^2(x - 4)^3(x + 3)$ .

Deg: 6 (even)

LC: -1

EB: ↓↓

Zeros: 0 (mult 2)  
4 (mult 3)  
-3 (mult 1)



2. Divide  $x^3 - 12x^2 + 41x - 42$  by  $x - 2$  using synthetic division.

$$\begin{array}{r|rrrrr} 2 & 1 & -12 & 41 & -42 & \\ & & 2 & -20 & 42 & \\ \hline & 1 & -10 & 21 & 0 & \end{array}$$

$$\boxed{x^2 - 10x + 21}$$

3. Divide  $x^3 - 12x^2 + 41x - 42$  by  $x - 2$  using polynomial division.

$$\begin{array}{r} x^2 - 10x + 21 \\ x-2 \overline{) x^3 - 12x^2 + 41x - 42} \\ \underline{-x^3 + 2x^2} \phantom{-42} \downarrow \\ -10x^2 + 41x \phantom{-42} \downarrow \\ \underline{+10x^2 + 20x} \phantom{-42} \downarrow \\ 21x - 42 \phantom{-42} \downarrow \\ \underline{21x - 42} \\ 0 \end{array}$$

4. Use division to find  $f(6)$  if  $f(x) = 4x^3 - 9x + 4$ .

$$\begin{array}{r|rrrr} 6 & 4 & 0 & -9 & 4 \\ & 24 & 144 & 810 & \\ \hline & 4 & 24 & 135 & 814 \end{array}$$

$$f(6) = 814$$

5. #4 is an application of which theorem:

Remainder Theorem

Factor Theorem