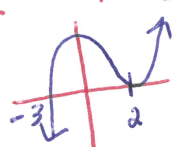


Lesson Vocabulary

Repeated Zeros - A zero that occurs more than once.  The zero 2 occurs twice

★ The # of factors = the degree

Finding factors from a graph - Locate the zeros, work backwards from zero-product rule. Take each zero and write it as a binomial. Multiply the factors to get standard form.

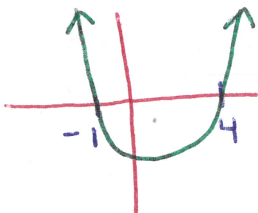
Example Problem(s)

ex.) $F(x) = x(x-2)(x-2)$ Find the Zeros and degree.

Zeros: $x=0, 2$

degree: 3

ex.) From the graph, write the rule for $F(x)$ in Factored and Standard Forms.



Zeros: $x=-1, 4$

$$F(x) = (x+1)(x-4)$$

$$F(x) = x^2 - 3x - 4$$

CYU pg. 335

$$\begin{aligned} \text{a i)} F(x) &= (x^2 - 5x + 6)(x - 4) \\ &= x^3 - 9x^2 + 26x - 24 \end{aligned}$$

degree: $3 = 2 + 1$

$$\begin{aligned} \text{a ii)} g(x) &= (-2x^2 + 6x - 1)(x^5 + 7) \\ &= -2x^7 + 6x^6 - x^5 - 14x^2 + 42x - 7 \end{aligned}$$

degree: $7 = 2 + 5$

$$\begin{aligned} \text{b) } h(x) &= (x^2 - 5x + 6)(2x - 7) \\ &= (x - 2)(x - 3)(2x - 7) \end{aligned}$$

Zeros: $x = 2, 3, \frac{7}{2}$

$$\begin{aligned} \text{c) } j(x) &= (x+3)^2(2x-5) \\ &= (x+3)(x+3)(2x-5) \end{aligned}$$

Zeros: $x = -3, \frac{5}{2}$

$$\begin{aligned} \text{d) } x &= 5, x = -2 \\ F(x) &= (x-5)(x+2) \\ F(x) &= x^2 - 3x - 10 \end{aligned}$$