Pathways Reading Guide M5 Section 5
Part 1

Please read Module 5, section1 in your e-book, pp. 43 – 46. (Click on Module 5, then "text.")

Be sure to *read with a pencil in hand* and attempt the examples before you read the solution given. Take notes of important definitions and ideas as you read. I don't expect you to have 100% comprehension of everything in the section, but spending significant time trying to understand the main ideas will assist you as you work on the Investigation during our next class.

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How do we find the zeros of a polynomial function?

Interpret the zeros of the box problem function. How many are there?

Where do the zeros appear on the graph of the function?

What are ***real roots*** of a polynomial function?

Type the function *f* given in Example 26 part a) on p. 45 in your graphing calculator and note what happens to the graph at the zeros x = -6 and x = 4? How is the graph different at each of these zeros? What do you notice about the exponent on each of the corresponding factors?

Now do the same for the function $y=(x-3)^2(x+1)(x-1)^3$. On your calculator, use the viewing window $[-5,8]_1$ by $[-20,20]_0$. What is the behavior of the graph at each of the zeros? Do you notice a pattern concerning the exponents on the factors and the behavior of the graph at the corresponding zeros?

Be sure to watch the video about zeros of polynomials on p. 46.