

Finding the Zeros, Max & Mins of a Polynomial Function Extra Credit

Using the link to **How to TI** (on the facweb page) for guidance.

1. Graph $y = x^2 + 6x - 16$. Adjust the WINDOW to properly fit the graph.
 - a. Trace the graph and find the value of y when $x = -7$.
 - b. What is the y -intercept?
 - c. Determine the x -intercepts (Find the zeros- see directions on **How to TI**)
 - d. Give the coordinate of where the minimum value of the graph occurs.
 - e. Solve for $x^2 + 6x - 16 > 0$.

2. Solve all real solutions to $15 = x^3 + 3x^2 - 7x$ to two decimal places. Adjust the WINDOW accordingly.
 - a. First, solve the equation above by graphing $y = x^3 + 3x^2 - 7x - 15$ and determine its zeros. Why is finding the zeros of $y = x^3 + 3x^2 - 7x - 15$ the same as solving the equation $15 = x^3 + 3x^2 - 7x$.
 - b. Solve the equation $15 = x^3 + 3x^2 - 7x$, but see if you can use the intersect function.
 - c. Give the coordinates (to two decimal places) where a local minimum value and local maximum of the graph occurs.
 - d. Solve $x^3 + 3x^2 - 7x < 0$