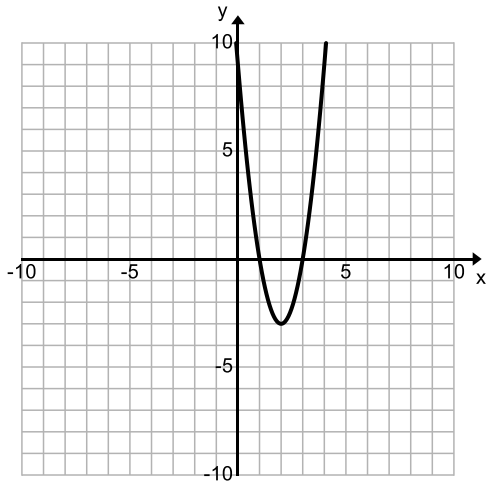
Calculator Skills: Minimum and Zeros



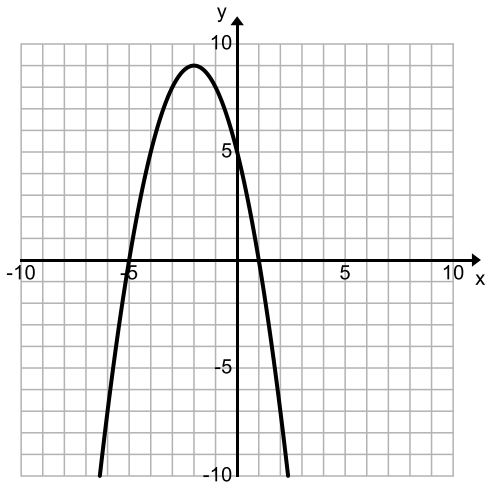
1. Given: $y = 3x^2 - 12x + 9$
   - Start a New Document.
   - Open Graphing.
   - **Graph** the function. Does the function fit your window; can you see the important parts of the function: zeros, minimum point. Adjust your window if necessary:
     - Menu
     - 4: Window
     - 1: Window Settings

   a) Steps to find the minimum point.
      i. menu
      ii. Go to 6: Analyze Graph
      iii. Go to 2: Minimum
         - Move your cursor to the Left of the lowest point, click.
         - Move your cursor to the Right of the lowest point, click.
         - Your calculator shows the minimum point; the x and y value for your Vertex. The y – value is the minimum of the function.

   b) Find the zeros.
      i. menu
      ii. Go to 6: Analyze Graph
      iii. Go to 1: Zero
         - Move your cursor to the Left of the one point on the x-axis, click.
         - Move your cursor to the Right of that point on the x-axis, click.
         - Your calculator shows you the zero point; the y – value is zero. The x-value is what we are looking for.
      iv. Repeat this process to find the 2nd zero, if necessary.

Calculator Skills: Maximum and Zeros

2. Given: $y = -x^2 - 4x + 5$



- Start a New Document.
- Open Graphing.
- **Graph** the function. Does the function fit your window; can you see the important parts of the function: zeros, maximum point. Adjust your window if necessary:
    - Menu
    - 4: Window
    - 1: Window Settings

a) Steps to find the maximum point.

i. menu
ii. Go to 6: Analyze Graph
iii. Go to 3: Maximum
- Move your cursor to the Left of the highest point, click.
- Move your cursor to the Right of the highest point, click.
- Your calculator shows the maximum point; the x and y value for your Vertex. The y – value is the maximum of the function.

b) Find the zeros.

i. menu
ii. Go to 6: Analyze Graph
iii. Go to 1: Zero
- Move your cursor to the Left of the one point on the x-axis, click.
- Move your cursor to the Right of that point on the x-axis, click.
- Your calculator shows you the zero point; the y – value is zero. The x-value is what we are looking for.

iv. Repeat this process to find the 2nd zero, if necessary.