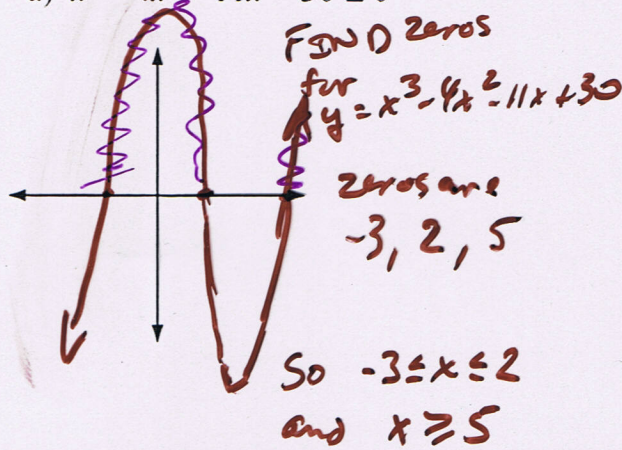


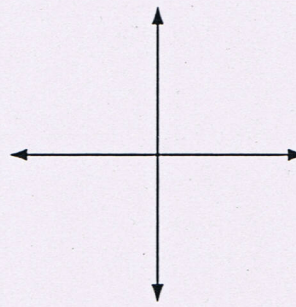
Example #3: Solve each polynomial inequality by graphing the polynomial function

(using your TI83+)

a) $x^3 - 4x^2 - 11x + 30 \geq 0$



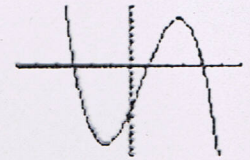
b) $3x^4 - 5x^2 - 4x + 5 < 0$



TRY YOURSELF

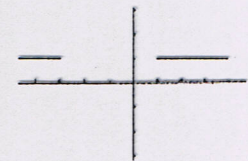
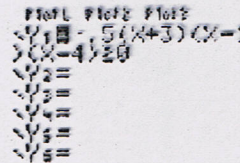
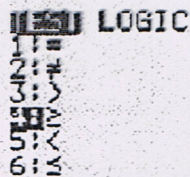
Example #4

1. Graph the function. Note that the zeros of the function are $x = -3, x = 1,$ and $x = 4.$



2. Return to the equation.

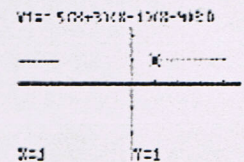
- Press $Y =$.
- Position the cursor at the end of the equation and choose the TEST function (2nd MATH).
- Choose the \geq symbol.
- Graph the inequality by choosing the ZDecimal operation from the ZOOM Menu.



When an inequality is true, the test function plots a point at 1. Otherwise, the plot is set to zero. The intervals where the inequality is true are represented by the horizontal bars at 1.

Use the TRACE key to move the cursor to the end points of each interval.

This test shows that the solution to this inequality is $x \leq -3, 1 \leq x < 4.$



Here is the TI-84+ test for the inequality $-0.5(x - 3)(x - 1)(x - 4) < 0$. The solution is $-3 < x < 1, x > 4$. Notice that there are no equal signs in this solution. Also, the solution to this inequality includes the intervals that are NOT in the $>$ inequality.



Homework: pg 129; # 1, 3, 5, (6, 8, 9) odd