

Algebra II
Polynomials #6

Name _____

FOLLOW THE STEPS GIVEN BELOW FOR EACH OF THE GIVEN INEQUALITIES.

1. Write the given inequality as an equation in the form $f(x) = 0$. Solve the equation.
2. Sketch the polynomial. Do not worry about the scale on the y-axis. (Remember zeros and multiplicities)
3. Make two different graphs.
 - a. A number line graph: plot the zeros, use appropriate boundary marking (open/closed circles), test original inequality, shade where true.
 - b. A coordinate plane graph (you did this in #2 already): use your results from the number line graph to shade the part **of the curve** that is the solution.

1. $(x+5)^2 \leq 0$

2. $-x^2 - 3x < 0$

3. $x^2 - 2x - 3 \geq 0$

4. $x^3(x+3)(x-2)^2 \geq 0$

5. $x^4 > 16x$

6. $-x(x-2)^2(x+3)^3(x-6) > 0$

7. $(x^2 + 4x)(x^2 + 4) < 0$

8. $(x^2 - x - 2)(x^2 + 2x + 1) \leq 0$