

## MATH 149

### Homework 10

Solve the inequalities, and give your answers in the interval notation. Sketch (rough) graphs of the given polynomials. (Make sure that your graph and your solution to the inequality agree!)

1.  $(x - 1)(x - 2)(x - 3)(x - 4) > 0$   
 $f(x) = (x - 1)(x - 2)(x - 3)(x - 4)$
2.  $(x + 1)x(x - 1) < 0$   
 $g(x) = (x + 1)x(x - 1)$
3.  $(x + 2)(x - 1)^2 \geq 0$   
 $h(x) = (x + 2)(x - 1)^2$
4.  $(x + 3)(x + 1)^2(x - 1)^3(x - 3) > 0$   
 $p(x) = (x + 3)(x + 1)^2(x - 1)^3(x - 3)$
5.  $(x + 2)x^3(x - 3)^2(x^2 + 5) \leq 0$   
 $q(x) = (x + 2)x^3(x - 3)^2(x^2 + 5)$