MATH 149

Homework 9

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

1. $f(x) = (x-1)(x-2)(x-3)(x-4)$
   $(x-1)(x-2)(x-3)(x-4) > 0$

2. $g(x) = (x+1)x(x-1)$
   $(x+1)x(x-1) < 0$

3. $h(x) = (x+2)(x-1)^2$
   $(x+2)(x-1)^2 \geq 0$

4. $p(x) = (x+3)(x+1)^2(x-1)^3(x-3)$
   $(x+3)(x+1)^2(x-1)^3(x-3) > 0$

5. $q(x) = (x+2)x^3(x-3)^2(x^2+5)$
   $(x+2)x^3(x-3)^2(x^2+5) \leq 0$