Sec 3.6
Polynomial Inequalities- beyond quadratic

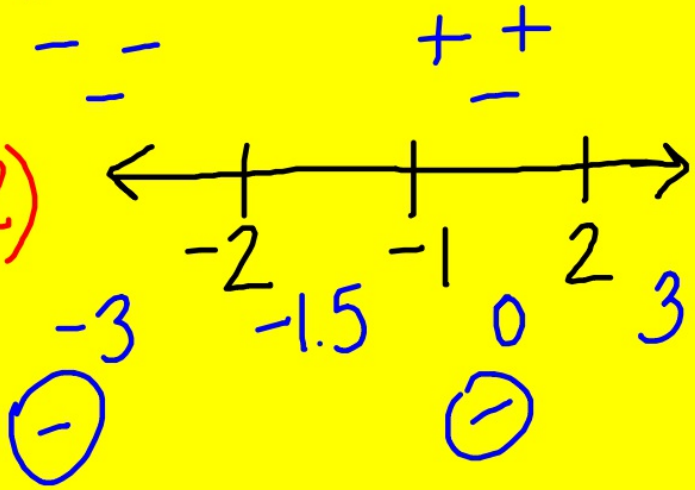
Solve- $x^3+x^2 \leq 4x+4$

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

$x^2(x+1)-4(x+1) \leq 0$

$(x+1)(x^2-4)$

$(x+1)(x+2)(x-2)$



Steps-

1. **get a zero**
2. **factor by grouping**
3. **use the zeros/critical numbers on your number line**
4. **test using test numbers in each interval (circled in blue)**
5. **determine sign (+ or -) for each interval**
6. **determine interval answer**

Suggested Practice

Sec 3.6, page 420
31,33,35,41

If one of your factors is a constant, it must be included when you are testing each interval.

31 $[0,3] \cup [5,\infty)$

35. $[-2,-1] \cup [1,\infty)$

33. $(-\infty,2) \cup (2,7\frac{1}{2})$

41. $\{0\} \cup [9,\infty)$