

# **Algebra II**

4-9

## **Solving Polynomial Inequalities**

What can we logically deduce about  $a$  and  $b$  in each scenario?

1)  $ab = 0$  ;  $a = 0$  or  $b = 0$

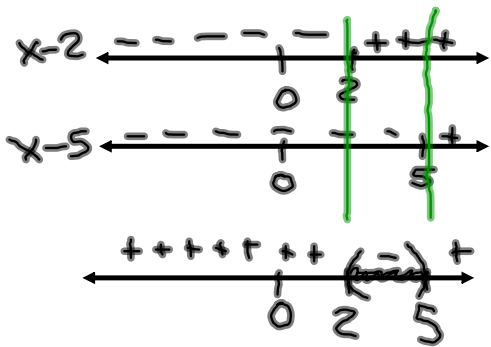
*Factors*

2)  $ab > 0$      $a > 0$  and  $b > 0$ , or  
 $a < 0$  and  $b < 0$

3)  $ab < 0$      $a > 0$  and  $b < 0$ , or  
 $a < 0$  and  $b > 0$

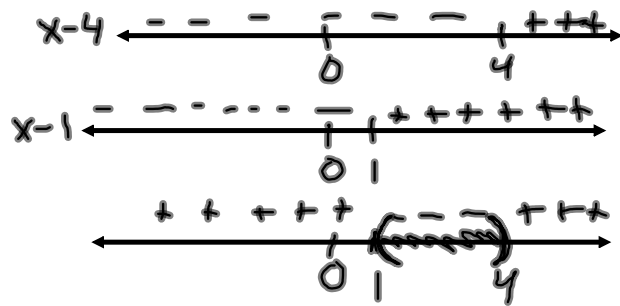
Find and graph the solution set of each inequality. (pg 204)

1)  $(x - 2)(x - 5) < 0$



9)  $x^2 - 5x + 4 \leq 0$

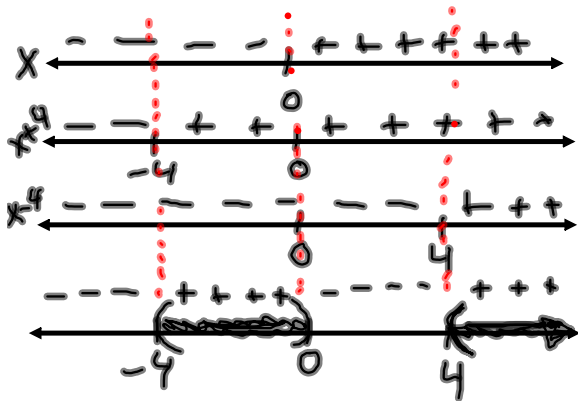
$(x - 4)(x - 1) \leq 0$



$$19) x^3 - 16x > 0$$

$$x(x^2 - 16) > 0$$

$$x(x+4)(x-4) > 0$$



$$27) x^4 + 9 \leq 10x^2$$

$$x^4 - 10x^2 + 9 \leq 0$$

$$(x^2 - 9)(x^2 - 1) \leq 0$$

$$(x+3)(x-3)(x+1)(x-1) \leq 0$$

pg 204

2-32 even