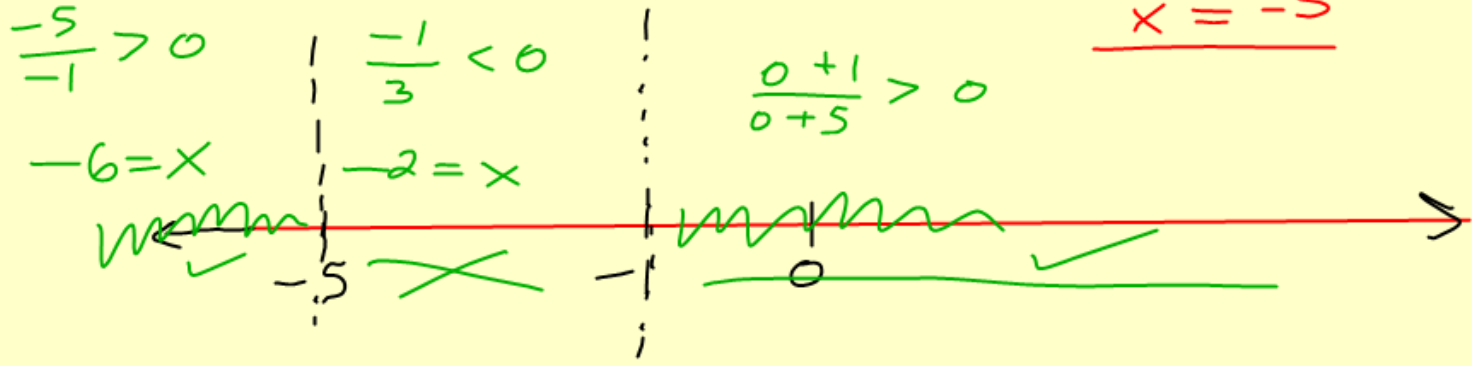


# Solve rational inequalities (algebraically)

$$\frac{x+1}{x+5} > 0$$

Where numerator = 0?  $x+1=0$   
denominator = 0?  $x+5=0$   
 $x = -1$   
 $x = -5$



$$-\infty < x < -5 \quad \cup \quad -1 < x < \infty$$
$$(-\infty, -5) \cup (-1, \infty)$$

example #2

$$\frac{3x+1}{x+4} \geq 1$$

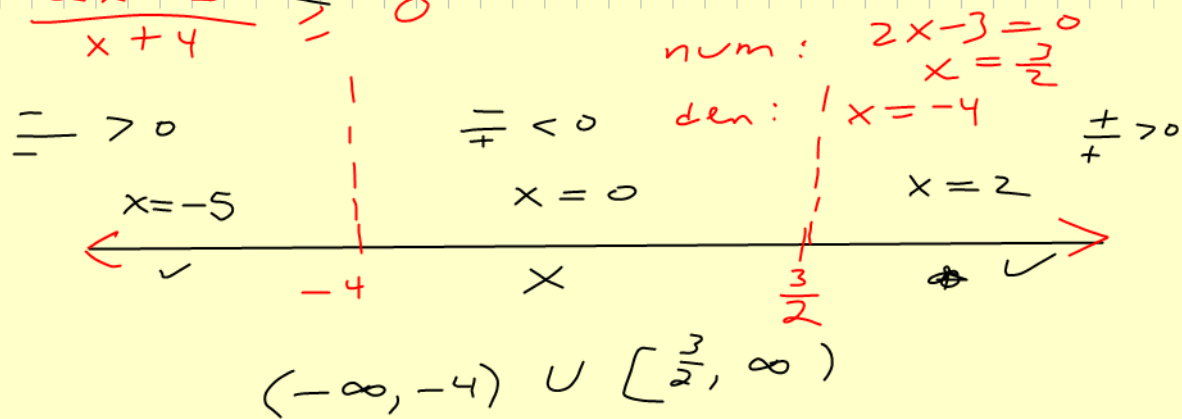
$$\frac{3x+1}{x+4} - 1 \geq 0$$

$$\frac{3x+1}{x+4} - \frac{x+4}{x+4} \geq 0$$

$$\frac{3x+1-(x+4)}{x+4} \geq 0$$

$$\frac{3x+1-x-4}{x+4} \geq 0$$

$$\frac{2x-3}{x+4} \geq 0$$



# Classwork

① Solve  $\frac{x^2 + 4x + 3}{x - 1} > 0$

$$(-3, -1) \cup (1, \infty)$$

②  $\frac{x^2 - 16}{(x - 1)^2} < 0$

$$(-4, 1) \cup (1, 4)$$

③  $\frac{x - 8}{x} \leq 3 - x$

$$(-\infty, -2] \cup (0, 4]$$

Homework :

finish exponential / log  
Friday's HW equations