Notes Section 2.8 Solving Inequalities in One Variable- Rational Inequalities

1) Solve the inequality using a sign chart

$$\frac{x-1}{x^2-4} < 0$$

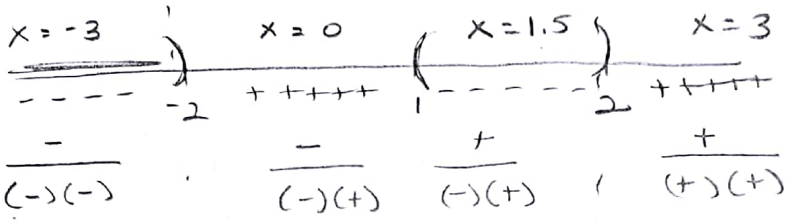
* key numbers for rational inequalities:

Zeros (numerator =0)

Undefined Values (denominator=0)

$$\frac{x-1}{(x-2)(x+2)} < 0$$

key #s $x = 1$, $x = 2$, $x = -2$

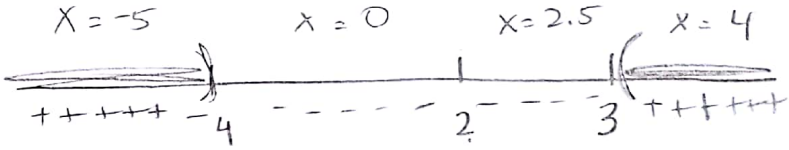


So $\frac{x-1}{x^2-4} < 0$ for intervals $(-\infty, -2) \cup (1, 2)$

2) Solve the inequality using a sign chart

$$\frac{x^2+x-12}{x^2-4x+4} > 0$$

$$\frac{(x+4)(x-3)}{(x-2)(x-2)} > 0$$



key #s $x = -4$, $x = 3$, $x = 2$ ↑ mult of 2

$\frac{(-)(-)}{(-)(-)}$ $\frac{(+)(-)}{(-)(-)}$ $\frac{(+)(-)}{(+)(+)}$ $\frac{(+)(+)}{(+)(+)}$

So $\frac{x^2+x-12}{x^2-4x+4} > 0$ for intervals

$(-\infty, -4) \cup (3, \infty)$