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2.7 Rational Inequalities

Ex1: $\frac{x-2}{x+3} \geq 2$

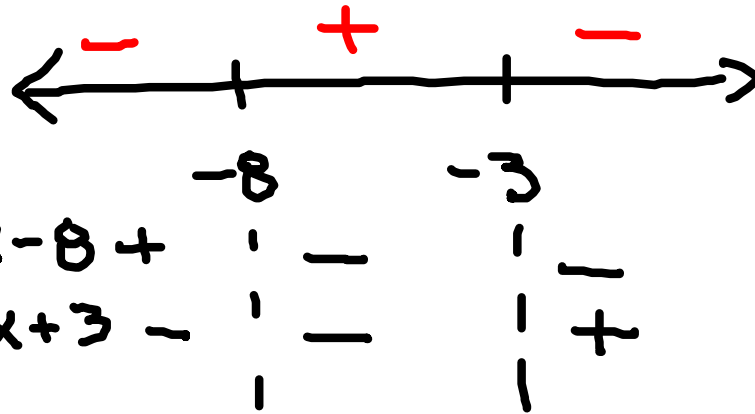
$$\frac{x-2}{x+3} + \frac{-2(x+3)}{1(x+3)} \geq 0$$

$$\frac{x-2}{x+3} + \frac{-2x-6}{x+3} \geq 0$$

$$\frac{-x-8}{x+3} \geq 0 \quad \text{pos}$$

$$-x-8=0 \quad x+3=0$$

$$x=-8 \quad x=-3$$



$$[-8, -3)$$

Ex2: $\frac{3}{x+4} \leq \frac{5}{x-3}$

$$\frac{3(x-3)}{x+4} + \frac{-5(x+4)}{x-3} \leq 0$$

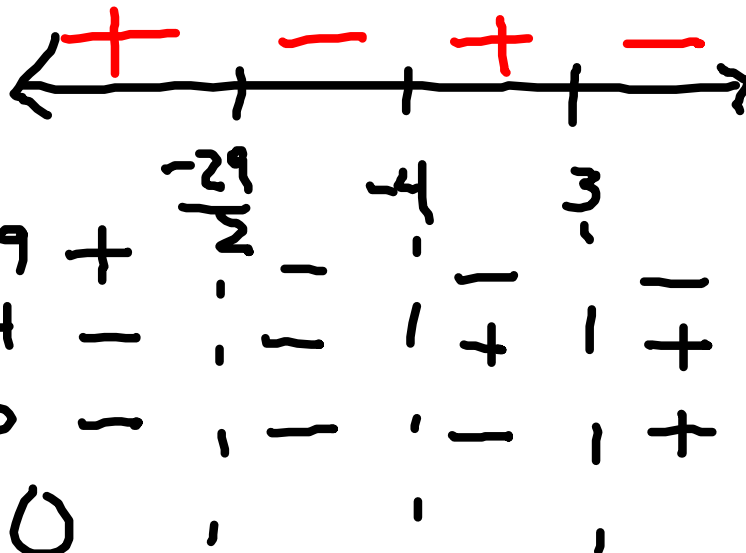
LCD $(x+4)(x-3)$

$$\frac{3x-9}{(x+4)(x-3)} + \frac{-5x-20}{(x+4)(x-3)} \leq 0$$

$$\frac{-2x-29}{(x+4)(x-3)} \leq 0$$

$-2x-29=0$ $x+4=0$ $x-3=0$
 $\Rightarrow x = -\frac{29}{2}$ $x = -4$ $x = 3$

HW pg 147 43-54 all \Rightarrow finish 6, 8 Sign graph



Solution: $[-\frac{29}{2}, -4) \cup (3, \infty)$