

- Solve the inequality: $\frac{-1}{x-6} < \frac{2}{9-x}$.

FIRST NEED TO WRITE IN THE CORRECT FORM...

CLEAN UP A BIT $\left\{ \begin{array}{l} \frac{-1}{x-6} - \frac{2}{9-x} < 0 \\ \frac{-1}{x-6} + \frac{2}{x-9} < 0 \end{array} \right.$

COMMON DENOM $\left\{ \begin{array}{l} \frac{-(x-9) + 2(x-6)}{(x-6)(x-9)} < 0 \end{array} \right.$

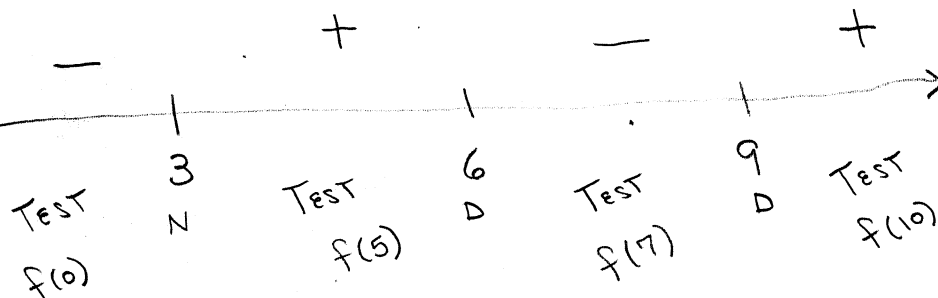
COMBINE TERMS $\left\{ \begin{array}{l} \frac{x-3}{(x-6)(x-9)} < 0 \\ \underbrace{\hspace{10em}}_{f(x)} \end{array} \right.$

(N) ZEROS OF NUMER: $x=3$

(D) ZEROS OF DENOM: $x=6, x=9$

SIGN CHART...

SIGN OF $f(x)$



$$f(x) < 0 \text{ ON } (-\infty, 3) \cup (6, 9)$$