$$\frac{3}{x^2 - 5x + 6} + \frac{4 - x}{3 - x} > \frac{6 - x}{2 - x}$$

m.c.m. : $\quad \bullet \; x^2 - 5x + 6 = (x - 2)(x - 3)$

$$\frac{3}{(x-2)(x-3)} + \frac{4 - x}{3 - x} - \frac{6 - x}{2 - x} > 0$$

$$\frac{3 - (4 - x)(x - 2) + (6 - x)(x - 3)}{(x - 2)(x - 3)} > 0$$

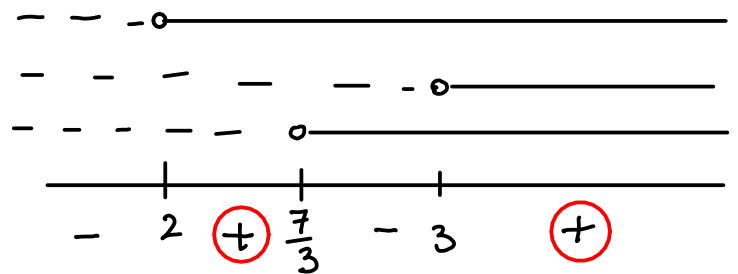$$\frac{3 - 4x + 8 + \cancel{x^2} - 2x + 6x - 18 - \cancel{x^2} + 3x}{(x - 2)(x - 3)} > 0$$

$$\frac{(-4 - 2 + 6 + 3)x + (3 + 8 - 18)}{(x - 2)(x - 3)} > 0$$

$$\frac{3x - 7}{(x - 2)(x - 3)} > 0$$

- $3x - 7 > 0 \implies x > 7/3$
- $x - 2 > 0 \implies x > 2$
- $x - 3 > 0 \implies x > 3$

$$\boxed{2 < x < \frac{7}{3} \quad \lor \quad x > 3}$$