Candle Center - Infinite Precalculus Name_____

Rational Inequalities

Date_____ Period____

Solve each inequality.

1) $\frac{x-7}{x-1} < 0$

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

3) $\frac{x+32}{x+6} \leq 3$

4) $\frac{x+68}{x+8} \geq 5$

5) $\frac{(x+3)(x+5)}{x+2} \geq 0$

6) $\frac{x+6}{x^2-5x-24} \geq 0$

7) $-\frac{10}{x-5} \geq -\frac{11}{x-6}$

8) $-\frac{3}{x+7} \leq -\frac{4}{x+8}$

9) $-\frac{7}{x+5} \leq -\frac{8}{x+6}$

10) $\frac{(x+7)(x-3)}{(x-5)^2} > 0$

Critical thinking question:

11) Write a rational inequality with the solution: $(-2, -1) \cup (1, \infty)$

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Solve each inequality.

1) $\frac{x-7}{x-1} < 0$

$(1, 7)$

2) $\frac{x+5}{x-4} \le 0$

$[-5, 4)$

3) $\frac{x+32}{x+6} \le 3$

$(-\infty, -6) \cup [7, \infty)$

4) $\frac{x+68}{x+8} \ge 5$

$(-8, 7]$

5) $\frac{(x+3)(x+5)}{x+2} \ge 0$

$[-5, -3] \cup (-2, \infty)$

6) $\frac{x+6}{x^2-5x-24} \ge 0$

$[-6, -3) \cup (8, \infty)$

7) $-\frac{10}{x-5} \ge -\frac{11}{x-6}$

$[-5, 5) \cup (6, \infty)$

8) $-\frac{3}{x+7} \le -\frac{4}{x+8}$

$(-\infty, -8) \cup (-7, -4]$

9) $-\frac{7}{x+5} \le -\frac{8}{x+6}$

$(-\infty, -6) \cup (-5, 2]$

10) $\frac{(x+7)(x-3)}{(x-5)^2} > 0$

$(-\infty, -7) \cup (3, 5) \cup (5, \infty)$

Critical thinking question:

11) Write a rational inequality with the solution: $(-2, -1) \cup (1, \infty)$

Example: $\frac{(x+1)(x+2)}{x-1} > 0$