Honors Precalc
Rational Inequalities Worksheet

Name Key
Period _____

Solve each of the following inequalities. Express your answer using interval notation.

11. $\frac{x-2}{x+4} \le 0$ $(-4, 2]$

12. $\frac{x+3}{x-1} \ge 0$ $(-\infty, -3] \cup (1, \infty)$

13. $\frac{x+4}{1-x} \le 0$ $(-\infty, -4] \cup (1, \infty)$

14. $\frac{3-x}{x+5} \le 0$ $(-\infty, -5) \cup [3, \infty)$

15. $\frac{x^2+5x}{x-3} \ge 0$ $[-5, 0] \cup (3, \infty)$

16. $\frac{x-4}{x^2+2x} \le 0$ $(-\infty, -2) \cup (0, 4]$

17. $\frac{(x+1)^2}{x^2+2x-3} \le 0$ $(-3, 1]$

18. $\frac{x^2-x-12}{x^2+4} \le 0$ $[-3, 4]$

19. $\frac{1}{x} < 4$ $(-\infty, 0) \cup (\frac{1}{4}, \infty)$

20. $\frac{5}{x} > 3$ $(0, 5/3)$

21. $\frac{3x+1}{x+4} \le 1$ $(-4, 3/2]$

22. $\frac{5x-8}{x-5} \ge 2$ $(-\infty, 2/3] \cup (5, \infty)$

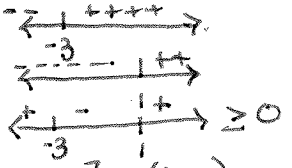
23. $\frac{2}{x+1} \ge \frac{1}{x-2}$ $(1, 2) \cup [5, \infty)$

24. $\frac{3}{x-3} \le \frac{2}{x+2}$ $(-\infty, -12] \cup (-2, 3)$

11. $\frac{x-2}{x+4} \le 0$

$(-4, 2]$

12. $\frac{x+3}{x-1} \ge 0$

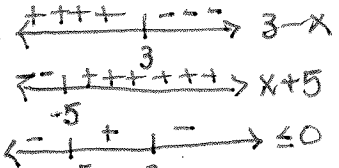


$(-\infty, -3] \cup (1, \infty)$

13. $\frac{x+4}{1-x} \le 0$

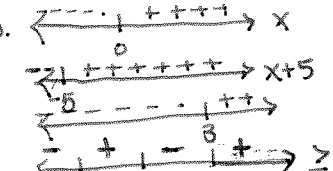
$(-\infty, -4] \cup (1, \infty)$

14. $\frac{3-x}{x+5} \le 0$



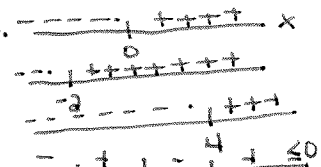
$(-\infty, -5) \cup [3, \infty)$

15. $\frac{x^2+5x}{x-3} \ge 0$ $\quad x(x+5)$



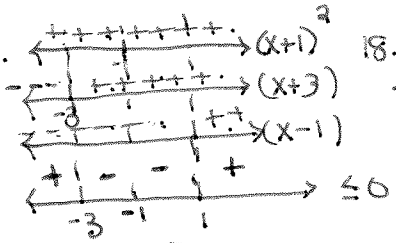
$[-5, 0] \cup (3, \infty)$

16. $\frac{x-4}{x^2+2x} \le 0$ $\quad x(x+2)$



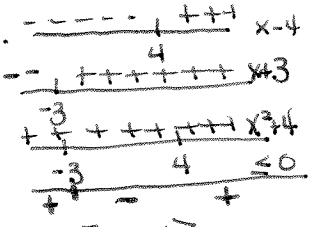
$(-\infty, -2) \cup (0, 4]$

17. $\frac{(x+1)^2}{x^2+2x-3} \le 0$ $\quad (x+3)(x-1)$



$(-3, 1]$

18. $\frac{x^2-x-12}{x^2+4} \le 0$ $\quad (x-4)(x+3)$



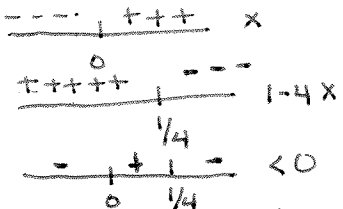
$[-3, 4]$

19. $\frac{1}{x} < 4$

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

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

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

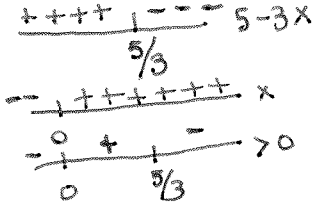


$(-\infty, 0) \cup (1/4, \infty)$

20. $\frac{5}{x} > 3$

$\frac{5}{x} - \frac{3x}{x} > 0$

$\frac{5-3x}{x} > 0$

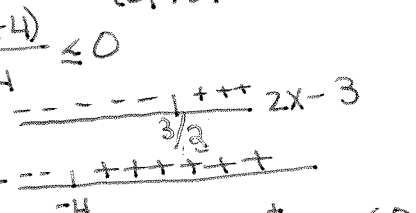


$(0, 5/3)$

21. $\frac{3x+1}{x+4} \le 1$

$\frac{3x+1}{x+4} - \frac{1(x+4)}{x+4} \le 0$

$\frac{2x-3}{x+4} \le 0$

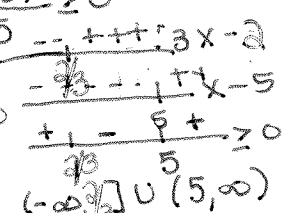


$(-4, 3/2]$

22. $\frac{5x-8}{x-5} \ge 2$

$\frac{5x-8}{x-5} - \frac{2(x-5)}{x-5} \ge 0$

$\frac{3x-2}{x-5} \ge 0$

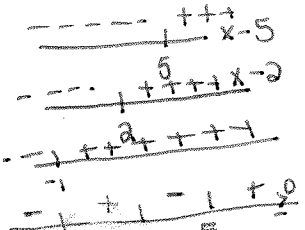


$(-\infty, 2/3] \cup (5, \infty)$

23. $\frac{2}{x+1} \ge \frac{1}{x-2}$

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

$\frac{x-5}{(x+1)(x-2)} \ge 0$



$(1, 2) \cup [5, \infty)$

24. $\frac{3}{x-3} \le \frac{2}{x+2}$

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

$\frac{x+12}{(x-3)(x+2)} \le 0$