



7.6 EXERCISES

Practice Makes Perfect

Solve Rational Inequalities

In the following exercises, solve each rational inequality and write the solution in interval notation.

339. $\frac{x-3}{x+4} \geq 0$

340. $\frac{x+6}{x-5} \geq 0$

341. $\frac{x+1}{x-3} \leq 0$

342. $\frac{x-4}{x+2} \leq 0$

343. $\frac{x-7}{x-1} > 0$

344. $\frac{x+8}{x+3} > 0$

345. $\frac{x-6}{x+5} < 0$

346. $\frac{x+5}{x-2} < 0$

347. $\frac{3x}{x-5} < 1$

348. $\frac{5x}{x-2} < 1$

349. $\frac{6x}{x-6} > 2$

350. $\frac{3x}{x-4} > 2$

351. $\frac{2x+3}{x-6} \leq 1$

352. $\frac{4x-1}{x-4} \leq 1$

353. $\frac{3x-2}{x-4} \geq 2$

354. $\frac{4x-3}{x-3} \geq 2$

355. $\frac{1}{x^2+7x+12} > 0$

356. $\frac{1}{x^2-4x-12} > 0$

357. $\frac{3}{x^2-5x+4} < 0$

358. $\frac{4}{x^2+7x+12} < 0$

359. $\frac{2}{2x^2+x-15} \geq 0$

360. $\frac{6}{3x^2-2x-5} \geq 0$

361. $\frac{-2}{6x^2-13x+6} \leq 0$

362. $\frac{-1}{10x^2+11x-6} \leq 0$

363. $\frac{1}{2} + \frac{12}{x^2} > \frac{5}{x}$

364. $\frac{1}{3} + \frac{1}{x^2} > \frac{4}{3x}$

365. $\frac{1}{2} - \frac{4}{x^2} \leq \frac{1}{x}$

366. $\frac{1}{2} - \frac{3}{2x^2} \geq \frac{1}{x}$

367. $\frac{1}{x^2-16} < 0$

368. $\frac{4}{x^2-25} > 0$

369. $\frac{4}{x-2} \geq \frac{3}{x+1}$

370. $\frac{5}{x-1} \leq \frac{4}{x+2}$

Solve an Inequality with Rational Functions

In the following exercises, solve each rational function inequality and write the solution in interval notation.

371. Given the function $R(x) = \frac{x-5}{x-2}$, find the values of x that make the function less than or equal to 0.

372. Given the function $R(x) = \frac{x+1}{x+3}$, find the values of x that make the function less than or equal to 0.

373. Given the function $R(x) = \frac{x-6}{x+2}$, find the values of x that make the function less than or equal to 0.

374. Given the function $R(x) = \frac{x+1}{x-4}$, find the values of x that make the function less than or equal to 0.

Writing Exercises

375. Write the steps you would use to explain solving rational inequalities to your little brother.

376. Create a rational inequality whose solution is $(-\infty, -2] \cup [4, \infty)$.

Self Check

a After completing the exercises, use this checklist to evaluate your mastery of the objectives of this section.

I can...	Confidently	With some help	No-I don't get it!
solve rational inequalities.			
solve an inequality with rational functions.			

b After reviewing this checklist, what will you do to become confident for all objectives?