

Mth 28.5, Homework 8 on sections 7.2, 7.3

Due by Wed, Nov 6.

Try these questions. Please use lots of space and as many pages as you want, so I can include corrections or comments. You do not need to write the questions, but it is very important that you show clearly any work you had to do to get your answers. Each question is worth 2 points.

Section 7.2 Add and subtract rational expressions

(1) Perform the indicated operation and simplify: $\frac{5}{6} + \frac{2}{9}$

(Hint: the answer is not $\frac{7}{15}$. You need a common denominator!)

(2) Perform the indicated operation and simplify: $\frac{2x}{x+3} + \frac{6}{x+3}$

(Your final answer should just be a number.)

(3) Perform the indicated operation and simplify: $\frac{x}{x-2} - \frac{x^2 - 4x + 4}{x-2}$

(4) Perform the indicated operation and simplify: $\frac{1}{x} - \frac{1}{3x}$

(The Least Common Denominator here is $3x$. Multiply top and bottom of the first fraction by the missing factor.)

(5) Perform the indicated operation and simplify: $\frac{3x}{x-3} + \frac{1}{2x+5}$

(This also needs a common denominator. Use $(x-3)(2x+5)$. No need to multiply out this denominator - leave it factored.)

(6) Perform the indicated operation and simplify: $\frac{1}{3x^2} + \frac{1}{2xy} + 4$

(Hint: write 4 over 1 and use the LCD.)

(7) Perform the indicated operation and simplify: $\frac{4}{m+3} - \frac{3}{m+4}$

(8) Perform the indicated operation and simplify: $\frac{2x^2 - 4}{2x^2 + x - 6} - \frac{x}{x+2}$

(Your final answer should have $3x - 4$ on top.)

(9) Perform the indicated operation and simplify: $\frac{2y}{y^2 + 2y - 8} + \frac{4}{y^2 + 3y - 10}$

Section 7.3 Simplify complex rational expressions

(10) Simplify the complex fraction: $\frac{\frac{2}{5} + \frac{4}{5}}{\frac{1}{5} + \frac{1}{10}}$

(11) Simplify the complex rational expression: $\frac{\frac{4}{a^2} - \frac{1}{ab}}{\frac{3}{a} + \frac{8}{b}}$

(Your final answer should have $a(8a + 3b)$ on the bottom.)

(12) Simplify: $\frac{\frac{x}{x^2-4} + 1}{\frac{x}{x+2} - 1}$

(13) Simplify: $\frac{\frac{3x}{x-1} - \frac{1}{2}}{5x + 1}$

If you get stuck on a question or aren't sure if you understand it:

- Go over the relevant class notes and section in the textbook.
- Check if you get the right answer for a similar odd-numbered question in the textbook (answers at the back of the book).
- Ask me about it after class.
- Come to my office hours: Mon 12:00 - 1:00, Wed 12:00 - 1:00 in CP 317.
- Go to the Math Tutorial Lab in-person in CP 303 or online.