

Algebra: Adding & Subtracting Rational Expressions



Practice Worksheet • numberbender.com

Name: _____

Date: _____

Score: ____ / 10

DIRECTIONS

Add or subtract the rational expressions. Find the LCD when denominators differ, rewrite each fraction, then combine and simplify.

1. Add: $3/x + 5/x$ Answer: _____	2. Subtract: $7/(2a) - 3/(2a)$ Answer: _____
3. Add: $2/(x+1) + 4/(x+1)$ Answer: _____	4. Subtract: $5/(y-3) - 2/(y-3)$ Answer: _____
5. Add: $1/x + 1/y$ Answer: _____	6. Add: $2/(3x) + 1/x$ Answer: _____
7. Subtract: $5/(6a) - 1/(4a)$ Answer: _____	8. Add: $3/(4x) + 2/(3x)$ Answer: _____
9. Add: $2/(x+2) + 3/(x-1)$ Answer: _____	10. Subtract: $4/(x+3) - 1/(x-2)$ Answer: _____

Based on the Numberbender lesson "ALGEBRA: Adding and Subtracting Rational Expressions" • youtu.be/24iEx_9wSUQ

Answer Key & Solutions

Algebra: Rational Expressions • Numberbender

TEACHER NOTES

Items 1-4: same denominator — combine numerators directly. Items 5-8: different monomial denominators — find LCD. Items 9-10: binomial denominators — factor before finding LCD.

1. Add: $3/x + 5/x$

Answer: $8/x$

Same denominator; $3+5=8$, over x .

2. Subtract: $7/(2a) - 3/(2a)$

Answer: $4/(2a) = 2/a$

$7-3=4$ over $2a$; simplify $\rightarrow 2/a$.

3. Add: $2/(x+1) + 4/(x+1)$

Answer: $6/(x+1)$

$2+4=6$, over $(x+1)$.

4. Subtract: $5/(y-3) - 2/(y-3)$

Answer: $3/(y-3)$

$5-2=3$, over $(y-3)$.

5. Add: $1/x + 1/y$

Answer: $(x+y)/(xy)$

LCD = xy ; $y/(xy) + x/(xy) = (x+y)/(xy)$.

6. Add: $2/(3x) + 1/x$

Answer: $5/(3x)$

LCD = $3x$; $2/(3x) + 3/(3x) = 5/(3x)$.

7. Subtract: $5/(6a) - 1/(4a)$

Answer: $7/(12a)$

LCD = $12a$; $10/(12a) - 3/(12a) = 7/(12a)$.

8. Add: $3/(4x) + 2/(3x)$

Answer: $17/(12x)$

LCD = $12x$; $9/(12x) + 8/(12x) = 17/(12x)$.

9. Add: $2/(x+2) + 3/(x-1)$

Answer: $(5x+4)/[(x+2)(x-1)]$

LCD = $(x+2)(x-1)$; $2(x-1) + 3(x+2) = 5x+4$.

10. Subtract: $4/(x+3) - 1/(x-2)$

Answer: $(3x-11)/[(x+3)(x-2)]$

LCD = $(x+3)(x-2)$; $4(x-2) - 1(x+3) = 3x-11$.