



Math Virtual Learning

College Prep Algebra

May 12, 2020



College Prep Algebra

Lesson: May 12, 2020

Objective/Learning Target:

- I can add, subtract, multiply, divide, and simplify rational expressions
 - I can solve a rational equation

**On April 28, 2020 you started
Rational Expressions and Rational Equations.**

And here you are, two weeks later—you have all the tools you need to

- **Add, subtract, multiply, divide,
and simplify rational expressions**
- **Solve a rational equation**

Identify the skills you feel you need more practice on, then practice those skills using the practice problems on the following pages.

Practice: I can simplify rational expressions

Refresh my memory: [April 28 Lesson](#)

◆ BOOKS NEVER WRITTEN ◆

Everybody Needs Insurance by

$\frac{9}{5}$ $\frac{3}{10}$ $\frac{12}{12}$ $\frac{1}{7}$ $\frac{8}{2}$ $\frac{11}{11}$ $\frac{6}{6}$ $\frac{2}{2}$ $\frac{12}{12}$ $\frac{10}{10}$

Rock 'n Roll Your Baby by

$\frac{5}{5}$ $\frac{10}{10}$ $\frac{12}{12}$ $\frac{7}{7}$ $\frac{2}{2}$ $\frac{11}{11}$ $\frac{6}{6}$ $\frac{10}{10}$

50 Years in the Navy by

$\frac{8}{8}$ $\frac{8}{8}$ $\frac{12}{12}$ $\frac{10}{10}$ $\frac{4}{4}$ $\frac{4}{4}$

ABOVE ARE THE TITLES OF THREE "BOOKS NEVER WRITTEN." TO DECODE THE NAMES OF THEIR AUTHORS:

Simplify each expression below. Find your answer and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

① $\frac{2x^2 - 18}{4x + 12}$

⑤ $\frac{-x^2 + 8x - 16}{x^3 - 4x^2}$

⑨ $\frac{4a^3b^4(a^2 + a - 42)}{28a^4b^4(6 - a)}$

② $\frac{3x^2 - 24x + 36}{2x^2 - x - 6}$

⑥ $\frac{49x - x^3}{7 - 6x - x^2}$

⑩ $\frac{a^4 - 8a^3b}{a^3 - 64ab^2}$

③ $\frac{5x^2 - 25x}{3x^3 - 75x}$

⑦ $\frac{a^2 + 11ab + 18b^2}{a^2b + 9ab^2}$

⑪ $\frac{4a^2 + 8ab - 12b^2}{6a^2 - 12ab + 6b^2}$

④ $\frac{x^2 + 5x - 24}{3 - x}$

⑧ $\frac{15a^5b(5 - a)}{6a^2b^3(a - 5)}$

⑫ $\frac{10a^3b + 10a^2b}{4a^2b^3 + 2ab^3}$

Answers for exercises 1–6:

Ⓜ $-\frac{x-4}{x-1}$

Ⓐ $\frac{3(x-6)}{2x+3}$

Ⓤ $\frac{5}{3(x+5)}$

Ⓡ $-(x+8)$

Ⓣ $\frac{x-3}{2}$

Ⓜ $\frac{x(x-7)}{x+2}$

Ⓒ $\frac{x(x-7)}{x-1}$

Ⓛ $-\frac{x-4}{x^2}$

Answers for exercises 7–12:

Ⓝ $-\frac{a+7}{7a}$

Ⓝ $\frac{2(a+3b)}{3(a-b)}$

Ⓟ $\frac{2(a-3b)}{3(a+b)}$

Ⓓ $\frac{a+2b}{ab}$

Ⓛ $-\frac{5a^3}{2b^2}$

Ⓢ $\frac{5a(a+1)}{b^2(2a+1)}$

Ⓔ $\frac{a^2}{a+8b}$

Ⓑ $-\frac{a-7}{7ab}$

◆ BOOKS NEVER WRITTEN ◆

Everybody Needs Insurance by $\frac{J}{9} \frac{U}{3} \frac{S}{12} \frac{T}{1} \frac{I}{8} \frac{N}{11} \frac{C}{6} \frac{A}{2} \frac{S}{12} \frac{E}{10}$

Rock 'n Roll Your Baby by $\frac{L}{5} \frac{E}{10} \frac{S}{12} \frac{D}{7} \frac{A}{2} \frac{N}{11} \frac{C}{6} \frac{E}{10}$

50 Years in the Navy by $\frac{F}{8} \frac{I}{8} \frac{S}{12} \frac{E}{10} \frac{R}{4} \frac{R}{4}$

ABOVE ARE THE TITLES OF THREE "BOOKS NEVER WRITTEN," TO DECODE THE NAMES OF THEIR AUTHORS:

Simplify each expression below. Find your answer and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

① $\frac{2x^2 - 18}{4x + 12}$ T ⑤ $\frac{-x^2 + 8x - 16}{x^3 - 4x^2}$ L ⑨ $\frac{4a^3b^4(a^2 + a - 42)}{28a^4b^4(6 - a)}$ J

② $\frac{3x^2 - 24x + 36}{2x^2 - x - 6}$ A ⑥ $\frac{49x - x^3}{7 - 6x - x^2}$ C ⑩ $\frac{a^4 - 8a^3b}{a^3 - 64ab^2}$ E

③ $\frac{5x^2 - 25x}{3x^3 - 75x}$ U ⑦ $\frac{a^2 + 11ab + 18b^2}{a^2b + 9ab^2}$ D ⑪ $\frac{4a^2 + 8ab - 12b^2}{6a^2 - 12ab + 6b^2}$ N

④ $\frac{x^2 + 5x - 24}{3 - x}$ R ⑧ $\frac{15a^5b(5 - a)}{6a^2b^3(a - 5)}$ I ⑫ $\frac{10a^3b + 10a^2b}{4a^3b^3 + 2ab^3}$ S

Practice: I can multiply rational expressions

Refresh my memory:
[April 29](#)
[Lesson](#)

Express each product below in simplest form. Find your answer in the answer column and notice the two letters next to it. Write these letters in the two boxes at the bottom of the page that contain the number of that exercise.

$$\textcircled{1} \frac{a^2 - b^2}{a^4 b} \cdot \frac{ab^2}{3a + 3b}$$

$$\textcircled{2} \frac{4 - a}{5a} \cdot \frac{a^2 + 5a}{a^2 + a - 20}$$

$$\textcircled{3} \frac{a^2 + 5ab + 6b^2}{a^2 - 5ab + 6b^2} \cdot \frac{10a - 30b}{5a + 10b}$$

$$\textcircled{4} \frac{3a^2 b - ab^2}{6a} \cdot \frac{9a^2}{9a^2 - b^2}$$

$$\textcircled{5} \frac{2a^2 - 13a + 15}{8a^2 - 12a} \cdot \frac{6a - 4a^2}{a^2 - 10a + 25}$$

$$\textcircled{6} \frac{-a^3 + ab^2}{a^2} \cdot \frac{a^3 + 7a^2 b}{a^2 + 6ab - 7b^2}$$

$$\textcircled{7} \frac{6a + 24}{2a^2 + 5a - 12} \cdot \frac{4a^2 - 9}{15a^2}$$

$$\textcircled{8} \frac{8a - 40}{40 - 3a - a^2} \cdot \frac{a - 8}{2a^2 - 8a}$$

$$\textcircled{9} \frac{27a^4 b^7}{3a^2 - 6a + 3} \cdot \frac{(a - 1)^3}{9ab^3}$$

$$\textcircled{\text{ES}} 3a^3 b(a - 1)$$

$$\textcircled{\text{OT}} -a(a + b)$$

$$\textcircled{\text{EG}} a^3 b^4(a - 1)$$

$$\textcircled{\text{HL}} \frac{3a^2 b}{2(3a + b)}$$

$$\textcircled{\text{EB}} \frac{b(a - b)}{3a^3}$$

$$\textcircled{\text{TS}} -\frac{4(a - 8)}{4a - 8}$$

$$\textcircled{\text{DS}} -\frac{4(a - 8)}{a(a + 8)(a - 4)}$$

$$\textcircled{\text{TH}} \frac{2(a + 3b)}{a - 2b}$$

$$\textcircled{\text{AR}} \frac{2(2a + 3)}{5a^2}$$

$$\textcircled{\text{EN}} -\frac{1}{5}$$

$$\textcircled{\text{EY}} -\frac{2a - 3}{2(a - 5)}$$

3	3	5	5	7	7	1	1	6	6	4	4	9	9	2	2	8	8
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THEY ARE LIKE LEGENDS

“LEGENDS” OR “LEG-ENDS”

Practice: I
can divide
rational
expressions

Refresh my
memory:

April 30
Lesson

What Happened to the Peanut Who Went Walking Late at Night?

Express each quotient below in simplest form. Find your answer in the answer column and notice the letter next to it. Write this letter in each box containing the number of that exercise.

$$\textcircled{1} \frac{12m^2n^5}{m+5} \div \frac{3m^3n}{m^2-25}$$

$$\textcircled{2} \frac{n^2-9n+20}{6m^7n^2} \div \frac{5n-20}{10mn^2}$$

$$\textcircled{3} \frac{m^2}{m^2-7m} \div \frac{1}{m^2-4m-21}$$

$$\textcircled{4} \frac{16-2m}{m^2+2m-24} \div \frac{m-8}{3m+18}$$

$$\textcircled{5} \frac{12n-36}{9-n^2} \div \frac{8n^5}{n^2+3n}$$

$$\textcircled{6} \frac{m^2-n^2}{m^2+2mn+n^2} \div \frac{m^2n-mn^2}{7m^2}$$

$$\textcircled{7} \frac{n^2-n-12}{2n^2-15n+18} \div \frac{3n^2-12n}{2n^3-9n^2}$$

$$\textcircled{8} \frac{17mn^3}{m^2+2m-35} \div \frac{34m^8n^4}{m^2+7m}$$

$$\textcircled{9} \frac{4n^3-25n}{3n^2-16n+5} \div (10n+25)$$

$$\textcircled{H} 7m(m-n)$$

$$\textcircled{N} -3n^4(n-3)$$

$$\textcircled{T} m(m+3)$$

$$\textcircled{D} -\frac{3}{2n^4}$$

$$\textcircled{U} \frac{4n^4(m-5)}{m}$$

$$\textcircled{R} \frac{1}{2m^4n(m-7)}$$

$$\textcircled{S} \frac{n(2n-9)(n+3)}{3(2n-3)(n-6)}$$

$$\textcircled{I} -\frac{6}{m-4}$$

$$\textcircled{A} \frac{n(2n-5)}{5(3n-1)(n-5)}$$

$$\textcircled{W} \frac{7m}{n(m+n)}$$

$$\textcircled{L} \frac{1}{2m^6n(m-5)}$$

$$\textcircled{E} \frac{n-5}{3m^6}$$

4

3

6

9

7

9

7

7

9

1

8

3

2

5

HE WAS ASSAULTED

“A-SALTED”

Answers A-E:

$\frac{11a-15}{2a-3}$ SCHOOL
$\frac{-29a-21}{5a+2}$ DECIDED
$\frac{8a+17}{a+4}$ BOLD
$\frac{2a+5}{a}$ THE
$\frac{-3(2a-3)}{3a-1}$ WHO
$\frac{3a+20}{a+4}$ DRIVING
$\frac{-27a-16}{5a+2}$ WANTED
$\frac{13a-12}{2a-3}$ TEACHER
$\frac{-a+10}{3a-1}$ FROM

Did You Hear About...

A	B	C	D	E
F	G	H	I	J
				?

Express each sum or difference below in simplest form. Find your answer in the appropriate answer column and notice the word beneath it. Write this word in the box containing the letter of that exercise.

(A) $\frac{5}{a} + 2$

(B) $\frac{8}{a+4} + 3$

(C) $4 + \frac{5a}{2a-3}$

(D) $\frac{7}{3a-1} - 2$

(E) $\frac{a-9}{5a+2} - 6$

(F) $\frac{3x+1}{x^2+10} + 4$

(G) $\frac{5}{x^2-9} + \frac{2}{x-3} + 1$

(H) $\frac{x}{x+2} + \frac{x}{x-2} - 5$

(I) $\frac{10}{x-3} - \frac{10}{x+5} + 2$

(J) $3 - \frac{2x}{x-2} - \frac{5x}{x-5}$

Answers F-J:

$\frac{2x^2+4x+50}{(x-3)(x+5)}$ THE
$\frac{x^2+5x+30}{x^2+10}$ THAT
$\frac{x^2+2x+2}{(x+3)(x-3)}$ GRADE
$\frac{-3(7x-10)}{(x-2)(x-5)}$ CURVE
$\frac{x^2+6x-30}{(x-3)(x+5)}$ HIGHWAY
$\frac{4x^2+3x+41}{x^2+10}$ TO
$\frac{3x^2+x-3}{(x+3)(x-3)}$ CRASH
$\frac{-3x^2+20}{(x+2)(x-2)}$ ON
$\frac{-5x^2+12}{(x+2)(x-2)}$ SOME

Practice: I can add and subtraction rational expressions.

Refresh my memory:
[May 1 Lesson](#)

The driving teacher who decided to
grade on the curve

What Sound Did the Sheep Hear When Her Sister Exploded?



Solve each equation and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

$$\textcircled{1} \frac{2}{x+3} + \frac{3}{x+4} = \frac{7}{x^2+7x+12}$$

$$\textcircled{2} \frac{4}{x-5} + \frac{1}{x+2} = \frac{2x+7}{x^2-3x-10}$$

$$\textcircled{3} \frac{a-30}{a^2+4a-21} = \frac{5}{a+7} - \frac{2}{a-3}$$

$$\textcircled{4} \frac{x}{x+4} = \frac{3}{x-1}$$

$$\textcircled{5} \frac{6}{y+2} + \frac{1}{y-2} = 1$$

$$\textcircled{6} \frac{3}{n} + \frac{2}{n-1} = 2$$

$$\textcircled{7} 2 = \frac{x}{x+3} - \frac{3}{x-5}$$

$$\textcircled{8} \frac{1}{d-7} + \frac{d}{d-2} = \frac{5}{d^2-9d+14}$$

$$\textcircled{9} \frac{x-1}{x+1} - \frac{6}{x-3} = 3$$

OBJECTIVE 3-n: To solve fractional equations (solving a quadratic equation may be required).

YE	SI	CK	SB	AM	SH	OO	FR	KO	MB	IG	UP	AH	ER
6, 1	-5, 2	-1	-9	-3, 1	$-\frac{1}{2}$	2, 8	-7, 3	-2	$\frac{1}{4}, -1$	$\frac{1}{2}, 3$	$\frac{4}{3}$	$\frac{1}{3}, 5$	6, -2

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Practice: I
can solve
rational
equations

Refresh my
memory:
[May 7 Lesson](#)
and [May 8
Lesson](#)

SISBOOMBAH

Sis-Boom-Bah

Remember you were to CROSS out the box that contained the answer and use the remaining boxes.