

2017 ALGEBRA 2 2018
WEEKLY ASSIGNMENT SHEET FOR
APR. 23 TO APR. 27
FOURTH QUARTER (Q4). WEEK 4 OF 9. (Q4-4)

INSTRUCTOR: MR. ANDRUS.

ROOM: 514

CONTINUING OBJECTIVES:

1. *Improve organization skills.*
2. *Move from memorizing and repeating to applying and thinking.*
3. *Read, write and interpret math statements.*
4. *Use mistakes as opportunities to learn.*
5. *Expand successes and build up weaknesses. Continue to move forward.*

CURRENT OBJECTIVES:

1. *Rational and Radical Functions. Multiply/divide. Add/subtract. A.APR.1, A.CED.1, A.CED.2, A.REI.2, A.REI.11, A.REI.12, A.SSE.1, A.SSE.3, F.IF.5, F.IF.7*
2. *Review.*
3. *Complete an objective test $\geq 80\%$. Notes may not be used on objective tests.*

MONDAY (IF YOU DID NOT ATTEND LAST FRIDAY'S CLASS.) → →

1. After this week, what % of Q2 is complete? What % of S1 grade is complete?
2. Read & study section 5-2. Record 3 key words.
3. Starting on p. 324 do 8 – 34.
4. Read & study worksheet Monday q2-5. Record 3 key words.
5. Complete all problems on worksheet Monday q2-5.
6. Keep this work in your binder.

Please update last week's assessment. Please turn "IN". Check your last week's assignment sheet for Friday's work. Complete this work to prepare for this week's assessment. ☹☹

TUESDAY (IF YOU DID NOT ATTEND CLASS ON MONDAY) → →

1. Grade/UPDATE/discuss Monday's work.
2. Read & Study section 5-3. Record 3 key words.
3. Starting on p. 332 do 1 – 4, 13, 14, 15, 17, 18, 19, 28, 29.
4. Read & study worksheet Tuesday q2-5. Record 3 key words.
5. Complete all problems on worksheet Tuesday q2-5.
6. Keep this work in your binder.
7. *Complete an objective test $\geq 80\%$. Notes may not be used on objective tests.*

Please complete Monday's assignments. Use them to prepare for the assessment. ☹☹☹

WEDNESDAY (IF YOU DID NOT ATTEND CLASS ON TUESDAY) → →

1. Grade/UPDATE/discuss Tuesday's work.
2. Complete practice test day sheet.
3. Journal: how is the division of two rational expressions similar to the multiplication of two rational expressions?
4. Keep this work in your binder.
5. *Complete an objective test $> 80\%$. Notes may not be used on objective tests.*

Please complete Tuesday's assignments and use them to prepare for the assessment. ☹☹☹

THURSDAY (IF YOU DID NOT ATTEND CLASS ON WEDNESDAY) → →

1. Grade/UPDATE/discuss Wednesday's work. Review.
2. **Complete Weekly Test Q4-4 in Aleks.**
3. **You may use all note pages on this assessment.**
4. **If you did not attend class yesterday, your first take will count as your Practice Test. Your 2nd take will count as your test score. Additional takes will be updates.**

Please complete Wednesday's assignments and use them to prepare for the weekly assessment. ☹☹☹

FRIDAY (IF YOU DID NOT ATTEND CLASS ON THURSDAY) → →

1. Update weekly test q4-4 in Aleks. Due by the end of class.
2. Problem solving Q4-4. Turn in by the end of class.
3. *Complete an objective test $\geq 80\%$. Notes may not be used on objective tests.*

Please complete the weekly assessment today. ☹☹☹

Worksheet Monday q4-4

Multiplying and Dividing Rational Expressions

Examples of rational expressions: $\frac{3}{x}$, $\frac{x+1}{x+2}$, and $\frac{x+3}{2x^2}$

Undefined at $x = 0$

Undefined at $x = 0$

Undefined at $x = -2$

When simplifying a **rational expression**:

- Factor the numerator and the denominator completely.
- Divide out any common factors.
- Identify any x -values for which the expression is undefined.

Simplify: $\frac{24x^6}{8x^2}$

$x \neq 0$, because $8x^2$ is undefined at $x = 0$.

$\frac{24x^6}{8x^2} = \frac{\cancel{8} \cdot 3}{\cancel{8}} x^{6-2} = 3x^4$

Use the Quotient of Powers Property.

Simplify: $\frac{x^2 - 2x - 8}{x^2 + x - 2}$

First, factor the numerator and the denominator.

$\frac{x^2 - 2x - 8}{x^2 + x - 2} = \frac{(x-4)(x+2)}{(x+2)(x-1)} = \frac{(x-4)\cancel{(x+2)}}{\cancel{(x+2)}(x-1)} = \frac{(x-4)}{(x-1)} = \frac{x-4}{x-1}$

$x \neq -2$ and $x \neq 1$

Divide out common factors.

Simplify.

1. $\frac{x^2 - 2x - 3}{x^2 + 6x + 5}$

$\frac{(x+1)(x-3)}{(x+1)(x+5)}$

$x \neq$ _____

2. $\frac{20x^9}{4x^3}$

$x \neq$ _____

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

$x \neq$ _____

Worksheet-Monday q4-4 con't

Multiplying and Dividing Rational Expressions (continued)

Multiplying rational expressions is similar to multiplying fractions.

Multiply: $\frac{15x^2y^3}{4x^3y^5} \cdot \frac{2x^4y^3}{3xy^2}$.

$$\frac{15x^2y^3}{4x^3y^5} \cdot \frac{2x^4y^3}{3xy^2} = \frac{15}{4} \cdot \frac{2}{3} \cdot \frac{x^2x^4}{x^3x} \cdot \frac{y^3y^3}{y^5y^2}$$

Group like factors.

$$= \frac{5}{2} \cdot \frac{x^6}{x^4} \cdot \frac{y^6}{y^7}$$

Simplify constants. Add exponents to multiply.

$$= \frac{5}{2} \cdot x^2 \cdot \frac{1}{y}$$

Subtract exponents to divide.

$$= \frac{5x^2}{2y}$$

Simplify.

Multiplying rational expressions is similar to simplifying rational expressions.

Multiply: $\frac{x+3}{6x-6} \cdot \frac{x-1}{x^2-9}$.

$$\frac{x+3}{6x-6} \cdot \frac{x-1}{x^2-9} = \frac{x+3}{6(x-1)} \cdot \frac{x-1}{(x+3)(x-3)}$$

Completely factor all numerators and denominators.

$$= \frac{\cancel{x+3}}{6(\cancel{x-1})} \cdot \frac{\cancel{x-1}}{(\cancel{x+3})(x-3)}$$

Divide out common factors.

$$= \frac{1}{6(x-3)}$$

Simplify.

To divide rational expressions, multiply by the reciprocal.

$$\frac{x+7}{x-2} \div \frac{x^2-49}{2x-4} = \frac{x+7}{x-2} \cdot \frac{2x-4}{x^2-49} = \frac{\cancel{x+7}}{\cancel{x-2}} \cdot \frac{2(x-2)}{(x-7)(x+7)} = \frac{2}{x-7}$$

Multiply. Assume that all expressions are defined.

4. $\frac{12x^5y^2}{6x^2y^4} \cdot \frac{9x^3y}{3x^2y^3}$

5. $\frac{2x-2}{x+4} \cdot \frac{x^2+4x}{x^2-3x+2}$

6. $\frac{8x+16}{x^2-1} \cdot \frac{x+1}{4x+8}$

7. $\frac{3x^3y}{5xy^2} \div \frac{9xy^3}{15y}$

8. $\frac{4x-8}{x^2-4} \div \frac{3x}{x+2}$

9. $\frac{x^2+2x-3}{x^2-9} \div \frac{x^2+3x-4}{x^2-2x-3}$

Worksheet Monday q4-4 answers

1. $\frac{x-3}{x+5}$, -1, -5 2. $\frac{20}{4} \cdot \frac{x^9}{x^3}$; $5x^6$; 0

3. $\frac{x(\cancel{x-4})}{(\cancel{x-4})(x-1)}$; $\frac{x}{x-1}$; 1, 4

4. $\frac{6x^4}{y^4}$

5. $\frac{2x}{x-2}$

6. $\frac{2}{x-1}$

7. $\frac{x}{y^4}$

8. $\frac{4}{3x}$

9. $\frac{x+1}{x+4}$

Worksheet Tuesday q4-4 Adding and Subtracting Rational Expressions

Use a common denominator to add or subtract rational expressions.

Add: $\frac{6x+4}{x+5} + \frac{2x-8}{x+5}$.

Step 1 Add.

$$\frac{6x+4}{x+5} + \frac{2x-8}{x+5} = \frac{6x+4+2x-8}{x+5}$$

The denominators are the same. Add the numerators.

$$= \frac{6x+2x+4-8}{x+5}$$

Group like terms.

$$= \frac{8x-4}{x+5}$$

Combine like terms.

Step 2 Identify x-values for which the expression is undefined.

$x \neq -5$ because -5 makes the denominator equal 0.

Subtract: $\frac{4x-3}{2x-1} - \frac{8x+2}{2x-1}$.

Step 1 Subtract.

$$\frac{4x-3}{2x-1} - \frac{8x+2}{2x-1} = \frac{(4x-3)-(8x+2)}{2x-1}$$

The denominators are the same. Subtract the numerators.

$$= \frac{4x-3-8x-2}{2x-1}$$

Use the Distributive Property.

$$= \frac{-4x-5}{2x-1}$$

Combine like terms.

Step 2 Identify x-values for which the expression is undefined.

$x \neq \frac{1}{2}$ because $\frac{1}{2}$ makes the denominator equal 0.

Add or subtract.

1. $\frac{x-5}{x^2-4} + \frac{3x+2}{x^2-4}$

$$\frac{(x-5)+(3x+2)}{x^2-4}$$

$x \neq$ _____

2. $\frac{7x-5}{x+3} - \frac{4x-1}{x+3}$

$$\frac{(7x-5)-(4x-1)}{x+3}$$

$x \neq$ _____

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

$x \neq$ _____

4. $\frac{4x+1}{3x+7} + \frac{9-x}{3x+7}$

$x \neq$ _____

5. $\frac{8-x}{x-3} - \frac{5-x}{x-3}$

$x \neq$ _____

6. $\frac{5x+2}{x^2-1} - \frac{3x-7}{x^2-1}$

$x \neq$ _____

Worksheet Tuesday q4-4 answers

1. $\frac{4x-3}{x^2-4}$; $-2, 2$ 2. $\frac{3x-4}{x+3}$; -3

3. $\frac{-3x-5}{x-1}$; 1 4. $\frac{3x+10}{3x+7}$; $-\frac{7}{3}$

5. $\frac{3}{x-3}$; 3 6. $\frac{2x+9}{x^2-1}$; ± 1