

## Keystone WARMUP: Do #10 &amp; 15

Jenny has a job that pays her \$8 per hour plus tips ( $t$ ). Jenny worked for 4 hours on Monday and made \$65 in all. Which equation could be used to find  $t$ , the amount Jenny made in tips?

10

- A.  $65 = 4t + 8$
- B.  $65 = 8t \div 4$
- C.  $65 = 8t + 4$
- D.  $65 = 8(4) + t$

15 A compound inequality is shown below.

$$5 < 2 - 3y < 14$$

What is the solution of the compound inequality?

A.  $-4 > y > -1$

B.  $-4 < y < -1$

C.  $1 > y > 4$

D.  $1 < y < 4$

$$\begin{array}{ccc} \xrightarrow{-2} & \xrightarrow{-2} & \xrightarrow{-2} \\ 5 & & 2 - 3y & & 14 \\ -3 & & -3 & & -3 \\ \hline -3 & & -3y & & 12 \\ \hline -1 & & y & & -4 \end{array}$$

Keystone Prep:

Daily problems -- Friday quizzes

Algebra Content: Frequent quizzes

First quiz: Friday 4/10 on Rational Expressions

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Welcome!

Welcome to Norristown Area High School!

We have high expectations for student learning and accountability. It is important for the entire school community to foster an environment that promotes intellectual growth along with habits of commitment in order to develop young adults to their highest potential. The tone of our school should stress values of integrity, trust and decency as we continuously focus efforts that allow opportunities for intellectual development. Norristown Area High

Upcoming Events

Friday

5:00 PM - 10:30 PM DECA Dodgeball Tournament

April 14, 2015

Early Dismissal

April 24, 2015

7:00 PM - 10:00 PM Spring Musical

April 25, 2015

7:00 PM - 10:00 PM Spring Musical

<http://mr-norman.wikispaces.com/Keystone+Prep>

After School Algebra Keystone Preparation

Every Wednesday in Room 255  
After school - 3:45pm

definition: A factor is a number or expression that is multiplied with another.

We can only cancel FACTORS!

Algebra 1 – WH  
Rational Expressions Notes

Name: \_\_\_\_\_  
Date: \_\_\_\_\_ Pd: \_\_\_\_\_

Objective: Students will simplify rational expressions.

Example 1: Simplify.

a.  $\frac{3}{6} = \frac{\cancel{1 \cdot 3}}{\cancel{1 \cdot 2 \cdot 3}} = \frac{1}{2}$       b.  $\frac{8}{24} = \frac{1}{3}$

Example 2: Simplify.

$$\text{c. } \frac{2 \cdot \cancel{12x^4}}{\cancel{6x^4}} = \frac{\cancel{2} \cdot \cancel{4} \cdot \cancel{x^4}}{2 \cdot \cancel{3} \cdot \cancel{x^4}} = \frac{\cancel{2} \cdot \cancel{2}}{\cancel{2}} = 2$$

$$\text{d. } \frac{\cancel{30x^4}}{\cancel{48x^5}} = \frac{5 \cdot \cancel{6}}{8 \cdot \cancel{6} \cdot x} = \frac{5}{8x}$$

Example 3: Simplify.

e.  $\frac{9x+3}{12x+4} = \frac{3(\cancel{3x+1})}{4(\cancel{3x+1})}$

$$= \frac{3}{4}$$

f.  $\frac{40}{5x-40} = \frac{40}{5(x-8)}$

$$= \frac{\cancel{5} \cdot 8}{\cancel{5}(x-8)}$$
$$= \frac{8}{x-8}$$

Example 4: Simplify.

g.  $\frac{x^2-9}{5x+15} = \frac{\cancel{(x+3)}(x-3)}{5\cancel{(x+3)}}$

$$= \frac{x-3}{5}$$

Diagram for g: A vertical line with  $-9$  at the top,  $3$  on the left,  $-3$  on the right, and  $0$  at the bottom. A diagonal line crosses from the top-left to the bottom-right.

h.  $\frac{x^2+6x+5}{x^2-x-2} = \frac{\cancel{(x+1)}(x+5)}{(x-2)\cancel{(x+1)}}$

$$= \frac{x+5}{x-2}$$

Diagram for h: A vertical line with  $-2$  at the top,  $-2$  on the left,  $1$  on the right, and  $-1$  at the bottom. A diagonal line crosses from the top-left to the bottom-right.

Diagram for h: A vertical line with  $5$  at the top,  $1$  on the left,  $5$  on the right, and  $6$  at the bottom. A diagonal line crosses from the top-left to the bottom-right.



Example 5: Simplify.

i. 
$$\frac{3x^2 + 3x - 18}{2x^2 + 5x - 3} = \frac{3(x^2 + x - 6)}{(x+3)(2x-1)}$$

M:  $x^2 + 5x - 6$

U:  $(x+6)(x-1)$

D:  $(x + \frac{6}{2})(x - \frac{1}{2})$

S:  $(x+3)(x - \frac{1}{2})$

S:  $(x+3)(2x-1)$

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

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

$$\frac{-6}{3} = -2$$

Pg 3

$$\textcircled{1} \frac{16b^4}{32b^6} = \frac{1}{2b^2}$$

$$\textcircled{2} \frac{s^2 - 5s - 36}{s - 9} = \frac{(s-9)(s+4)}{s-9} = s+4$$

Factoring  $s^2 - 5s - 36$  using AC method:  
 $\begin{array}{r} -36 \\ -9 \quad 4 \\ -5 \end{array}$

$$\textcircled{3} \frac{d^2 - 4d - 21}{d+3} = \frac{(d-7)(d+3)}{d+3} = d-7$$

Factoring  $d^2 - 4d - 21$  using AC method:  
 $\begin{array}{r} -21 \\ -7 \quad 3 \\ -4 \end{array}$



Homework:

Rational Expressions pg 2

Key #11

Name : \_\_\_\_\_ Score : \_\_\_\_\_

Teacher : \_\_\_\_\_ Date : \_\_\_\_\_

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**Simplifying Rational Expressions**

Simplify each expression.

1)  $\frac{6x + 6}{x + 1}$

6)  $\frac{36n^2}{18n^5}$

2)  $\frac{y^2 - 6y - 16}{y - 8}$

7)  $\frac{12}{6c - 24}$

3)  $\frac{h - 1}{8h - 8}$

8)  $\frac{30p^6}{40p^2}$

4)  $\frac{45b^3}{18b}$

9)  $\frac{s - 1}{7s - 7}$

5)  $\frac{r^2 + 6r - 16}{r^2 + r - 6}$

10)  $\frac{g^2 - 6g + 5}{g^2 + 2g - 3}$



Name : \_\_\_\_\_ Score : \_\_\_\_\_

Teacher : \_\_\_\_\_ Date : \_\_\_\_\_

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**Simplifying Rational Expressions****Simplify each expression.**

1)  $\frac{16b^4}{32b^6}$

6)  $\frac{48k^2 + 24k - 24}{12k^2 + 6k - 6}$

2)  $\frac{s^2 - 5s - 36}{s - 9}$

7)  $\frac{24q^6}{48q^4}$

3)  $\frac{d^2 - 4d - 21}{d + 3}$

8)  $\frac{p - 8}{4p - 32}$

4)  $\frac{r - 7}{r^2 - r - 42}$

9)  $\frac{c^2 - 6c - 16}{c^2 - 3c - 10}$

5)  $\frac{6y - 24}{y - 4}$

10)  $\frac{21h^2 - 10h - 24}{18h^2 - 51h + 36}$



Name : \_\_\_\_\_ Score : \_\_\_\_\_

Teacher : \_\_\_\_\_ Date : \_\_\_\_\_

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**Simplifying Rational Expressions**

Simplify each expression.

1)  $\frac{70}{10n + 60}$

6)  $\frac{15k^6}{18k^5}$

2)  $\frac{18s^6}{48s^6}$

7)  $\frac{56r^3}{24r^6}$

3)  $\frac{21h^2 - 54h - 27}{18h^2 - 57h + 9}$

8)  $\frac{4y - 12}{16}$

4)  $\frac{g^2 - 5g - 6}{g^2 + 10g + 9}$

9)  $\frac{z - 9}{z^2 - 3z - 54}$

5)  $\frac{c - 9}{4c - 36}$

10)  $\frac{10q + 70}{50}$



Kuta Software - Infinite Algebra 1

Name\_\_\_\_\_

## Simplifying Rational Expressions

Date\_\_\_\_\_ Period\_\_\_\_

Simplify each expression.

1)  $-\frac{36x^3}{42x^2}$

2)  $\frac{16r^2}{16r^3}$

3)  $\frac{16p^2}{28p}$

4)  $\frac{32n^2}{24n}$

5)  $-\frac{70n^2}{28n}$

6)  $\frac{15n}{30n^3}$

7)  $\frac{2r-4}{r-2}$

8)  $\frac{45}{10a-10}$

9)  $\frac{x-4}{3x^2-12x}$

10)  $\frac{15a-3}{24}$

11)  $\frac{v-5}{v^2-10v+25}$

12)  $\frac{x+6}{x^2+5x-6}$



13)  $\frac{27}{27x+18}$

14)  $\frac{v^2 - 7v - 30}{v^2 - 5v - 24}$

15)  $\frac{x^2 + 8x + 12}{x^2 + 3x - 18}$

16)  $\frac{x^2 - 11x + 18}{x^2 + 2x - 8}$

17)  $\frac{b^2 + 3b - 28}{b^2 - 49}$

18)  $\frac{v^2 - 3v - 40}{v^2 - 11v + 24}$

19)  $\frac{4n - 4}{6n - 20}$

20)  $\frac{v^2 - 5v - 14}{v^2 + 4v + 4}$

21)  $\frac{6v^3 + 42v^2}{2v^2 + 26v + 84}$

22)  $\frac{x^3 - x^2 - 42x}{2x^2 - 20x + 42}$

23)  $\frac{2v^2 + 10v - 48}{8v + 64}$

24)  $\frac{9x^2 + 81x}{x^3 + 8x^2 - 9x}$

25)  $\frac{x^2 + 2x - 80}{2x^3 - 24x^2 + 64x}$

26)  $\frac{3r^2 - 39r + 90}{r^2 - 3r - 70}$