

Factoring Applications

Agenda

Warm-Up

HW Check

Activity

HW (Practice
2 pages)

Reminders

Test Friday

HW 5.2 and
5.3 due
FRIDAY

Warm-Up (Wednesday)

1. Solve the following equation for y and name the slope and the y-intercept.

$$2x - 4y = 12$$

$$\begin{array}{r} -2x \quad -2x \\ -4y = -2x + 12 \\ \hline -4 \quad -4 \quad -4 \end{array}$$

$$y = \frac{1}{2}x - 3$$

$$\begin{array}{l} m = \frac{1}{2} \\ b = -3 \end{array}$$

2. If one of the factors of $5x^2 - 19x + 12$ is $(5x - 4)$, find the other factor.

$$x - 3$$

$5x^2$	12
x	
-3	

Homework Check

1. $3x(4 - x)$
2. $4a(3a - 1)(3a + 1)$
3. $(n - 8)(n - 3)$
4. $4r(r + 3)(r - 1)$
5. $-2(a - 7)(a + 3)$
6. $-5(7x - 2)(7x + 2)$
7. $3(x + 5)(x - 2)$
8. $2(2x + 1)(2x + 1)$
9. $(2a - 1)(a - 3)$
10. prime
11. $2(3x - 2)(x + 4)$
12. a. $(x + 7)(x + 2)$
b. 12 cm by 7 cm

Algebra I - Unit 8: Topic 1 - Factoring Day 2

Practice - Factoring Day 2

pp 540-571

Name _____ Date _____ Period _____

1. An arch frames the entrance into a garden. The shape of the arch is modeled by $12x - 3x^2$. Factor this polynomial completely.



Factor each of the following polynomials completely:

$$1a) 36a^3 - 4a = 4a(3a-1)(3a+1)$$

$$9a^2 - 1 = 9a^2 + 0a - 1$$

$$\begin{array}{c|c|c} 3a & 9a^2 & 3a \\ \hline +1 & 3a & -1 \end{array}$$

$$\begin{array}{r} -9a^2 \\ 3a \times -3a \\ \hline -9 \\ 3 \overline{) -9} \\ -9 \\ \hline 0 \end{array}$$

$$\begin{array}{c|c|c} n & n^2 & -8n \\ \hline -3 & -3n & 24 \end{array}$$

$$\begin{array}{r} 24n^2 \\ 3n \times -8n \\ \hline -8n \\ +11n \end{array}$$

$$y = 24/x$$

$$\begin{array}{r} 24 \\ 1 \overline{) 24} \\ -24 \\ \hline 0 \end{array}$$

$$n^2 - 11n + 24 = (n-8)(n-3)$$

$$4r^3 + 8r^2 - 12r = 4r(r-1)(r+3)$$

$$\begin{array}{c} r^2 + 2r - 3 \\ (r^2 + 3r)(r-3) \\ r(r+3) - 1(r+3) \end{array}$$

$$\begin{array}{r} -3r^2 \\ 3r \times -1r \\ \hline -3r \\ 2r \end{array}$$

$$5. -2a^2 + 8a + 42 = -2(a-7)(a+3)$$

$$\begin{array}{c|c|c} a & a^2 & -7a \\ \hline +3 & 3a & -21 \end{array}$$

$$\begin{array}{r} -21a^2 \\ -7a \times 3a \\ \hline -21a \\ +4a \end{array}$$

$$6. 20 - 245x^2 =$$

$$7. 3x^2 + 9x - 30 = 3(x+5)(x-2)$$

$$x^2 + 3x - 10$$

$$\begin{array}{c|c|c} x & x^2 & 5x \\ \hline -2 & -2x & -10 \end{array}$$

$$\begin{array}{r} -10x^2 \\ 5x \times -2x \\ \hline -10x \\ +3x \end{array}$$

Algebra I - Unit 8: Topic 1 - Factoring Day 2

8.

$8x^2 + 8x + 2 =$

$2(2x+1)^2$

$$\begin{array}{r} 4x^2 + 4x + 1 \\ \hline 2x \overline{) 4x^2 + 4x + 1} \\ \underline{4x^2 + 2x} \\ 2x + 1 \end{array}$$

9. $2a^2 - 7a + 3 =$

$(a-3)(2a-1)$

$$\begin{array}{r} a - 3 \\ 2a \overline{) 2a^2 - 6a - 1} \\ \underline{2a^2 - 6a} \\ -1 \end{array}$$

$$\begin{array}{r} 6a^2 \\ \hline -6a \\ \hline -7a \end{array}$$

10. $x^2 - 3x + 8 =$

PRIME

$$\begin{array}{r} -24 \\ 12 \overline{) -2} \end{array}$$

$$\begin{array}{r} -24x^2 \\ 12x \overline{) -24x^2 - 2x} \\ \underline{12x} \\ -2x \end{array}$$

$$\begin{array}{r} 3x - 2 \\ \times \\ 3x^2 - 2x \\ \hline +4 \overline{) 12x - 8} \\ \underline{12x - 8} \\ 0 \end{array}$$

11. $6x^2 + 20x - 16 =$

$2(3x-2)(x+4)$

12. The area of a rectangle is represented by the trinomial $x^2 + 9x + 14$.

A. Factor this trinomial to find the dimensions.

$(x+7)(x+2)$

B. If $x = 5$ cm, find the actual dimensions of the rectangle.

$$\begin{array}{l} 12 \text{ cm} \\ 7 \text{ cm} \end{array}$$

Factoring Applications

Find your name and sit with your group

Yellow Groups

- | | |
|------------|----------|
| 1. Gabriel | 2. Hamza |
| Julia | Jennifer |
| Mina | Caesar |
| Abbi | |
| 3. Daniel | |
| Eduardo | |
| Adam | |
| Izzi | |

Pink Groups

- | | |
|--------------|-------------|
| 4. Allan | 6. Stephany |
| Armando | Jimmy |
| Francisco | Lesly |
| Elias | Marlon |
| 5. Bernedett | |
| Demetrice | 7. Luis |
| Erich | Promise |
| Valeria | Daylin |
| | Brianna |

Factoring Applications

Find your name and sit with your group

Yellow Groups

1. Joset

Angel

Brandon

Scarleth

2. Kimberly

Zaharah

Tiana

Jose

Pink Groups

3. Deon

James L.

Bryce

4. JJ

Lauryn

Yareli

Ramon

5. Colin

James F.

Tyler

6. Cristi

Maria

Tory

7. Danny

Miguel

Francisco

Factoring Applications

Find your name and sit with your group

Pink Groups

1. John
Jesus
Issac
Amairany

3. Max
Edgar
Oscar
Essence

5. Michael
Alexis
Faris
Juan

7. Tomarius
Cameron
Gisfer
Courtney
Terald

2. Kevin
Emeka
Rolando
Kyle

4. Ashley
Julissa
Alicia
George

6. Kathy
Pearl
Eric
Helay

Factoring Applications

Find your name and sit with your group

Yellow Groups

1. Darius

Autumn

Lexi

Ben

2. Raul

Molly

Krizia

Jesus

Pink Groups

3. Emmanuel

Flash

Aranzuset

6. Pierce

Alex

Umair

4. Adonte

David

Chris

Kadan

7. KC

DeOntae

Jacob

Factoring Applications

Find your name and sit with your group

Yellow Groups

1. Jonathan

Aisha

D'Quarius

Lauren

2. Kayleen

Nubia

Verlyncia

Kaleb

Pink Groups

3. Alexis

Shanya

Priscilla

Brianna

4. Valentin

J Burns

Sumaiya

Zander

5. J. Bustamante

Leo

Chris

Andres

Elsy

6. Eduardo

Jesus

Lucy

Mayra

7. Eric

Josue

Kimberly

Violet

Factoring Applications

With your group, you will solve the problems on the worksheet. Please use a dry erase marker to follow the instructions on the sheet - do not write on the actual worksheet!! You will show your work on the corresponding colored paper. Make sure you write the "answer" to the punchline at the top of your paper as well as your name

Ms. Korotkov

Answer: _____

NO WORK - NO CREDIT - NO KIDDING

#1-5 ☺

Algebra I – Unit 8: Topic 1 – Applications of Factoring

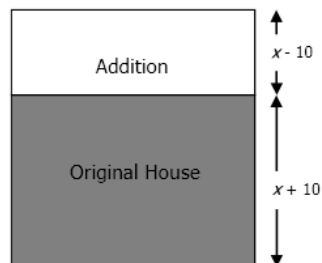
Practice – Applications of Factoring**pp 524-571**

Name _____ Date _____ Period _____

1. The Parthenon in Athens, Greece, is an ancient structure that has a rectangular base. The area of the base is modeled by the expression $3t^2 - 11t + 10$ *square meters*. What are the dimensions of the base?
2. The area of a rectangular room is given as $x^2 - 16x + 63$ square feet. If the width of room is $(x - 7)$, what is the length?

The figure shows the plans for an addition on the back of a house.
Use the figure to answer questions 3-5.

3. The area of the addition is $(x^2 + 10x - 200)$ ft^2 . What is its length?



4. What is the area of the original house?

5. The homeowners decide to extend the addition. The area with the addition is now $(x^2 + 12x - 160)$ ft^2 . By how many feet was the addition extended?

Algebra I – Unit 8: Topic 1 – Applications of Factoring

6. The area of a soccer field is $(6x^2 + 25x + 25)$ *square meters*. The width of the field is $(2x + 5)$ *meters*. What is the length of the field?
7. For a certain college, the number of applications received after x recruiting seminars is modeled by the polynomial $3x^2 + 490x + 6000$. What is this expression in its factored form?
8. Instructors led an exercise class from a raised rectangular platform at the front of the room. The width of the platform was $(x + 1)$ feet and the area was $(3x^2 + 2x - 1)$ ft^2 . Find the length of this platform.

