Virtual Learning

HS Essential Math 4

Unit 10

Lesson 3: Review Factoring

April 17, 2020

Essentials Math 4
Lesson 3: April 17, 2020

Learning Target:
I can use an area model to factor trinomials (a=1).

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You will explore the use of area models to factor algebraic expressions.

Directions:

1. Click through the slides.
2. Watch all videos on slides.
3. Do what each slide asks on a separate sheet of paper.

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Bell Work
April 17, 2020

Complete the area model below:

	_____	_____	_____
_____	$8n^2$	$-44n$	12

Bell Work Answer Key
April 17, 2020

Complete the area model below:

	$2n^2$	$-11n$	3
4	$8n^2$	$-44n$	12

Answer: $8n^2 - 44n + 12 = 4(2n^2 - 11n + 3)$

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Review the video about how to factor using an area model.

Try the practice problem below:

$$y^2 + 12y - 28$$

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Practice Problems: Unit 10 Lesson 3 page 17, M-N

For these problems, only the inside of the area model is filled in. Find a way to complete the outside of the model and use your work to write at least one equation (using multiplication or division) that is represented by the area model.

(M)

$9y$	45

(N)

$2n^2$	$16n$

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Answer Key:

Once you have completed the problems, check your answers for page 17 here.

For these problems, only the inside of the area model is filled in. Find a way to complete the outside of the model and use your work to write at least one equation (using multiplication or division) that is represented by the area model.

M

	y	5
9	$9y$	45

$9(y + 5) = 9y + 45$

(Instructions ask for only ONE equation. Possibilities shown.)

$\frac{9y + 45}{9} = y + 5$ $\quad$ $\frac{9y + 45}{y + 5} = 9$

N

	n	8
2n	$2n^2$	$16n$

$2n(n + 8) = 2n^2 + 16n$

(Other common factors include 2 and n.)

$\frac{2n^2 + 16n}{2n} = n + 8$ $\quad$ $\frac{2n^2 + 16n}{n + 8} = 2n$

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Practice Problems: Unit 10 Lesson 3 page 17, O-P

O

	$10a^2$
	$6a$

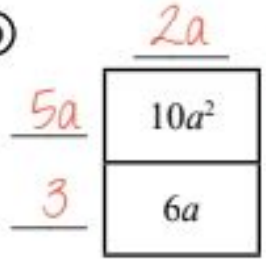
P

	$3x^2$	$24x$	15

Answer Key:

Once you have completed the problems, check your answers for page 17 here.

O



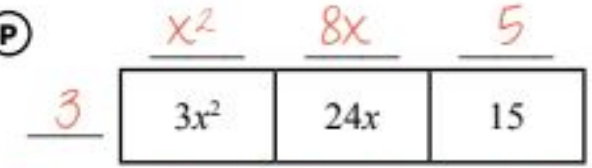
$2a(5a + 3) = 10a^2 + 6a$

$\frac{10a^2 + 6a}{2a} = 5a + 3$

$\frac{10a^2 + 6a}{5a + 3} = 2a$

(Other common factors include 2 and a)

P



$3(x^2 + 8x + 5) = 3x^2 + 24x + 15$

$\frac{3x^2 + 24x + 15}{3} = x^2 + 8x + 5$

$\frac{3x^2 + 24x + 15}{x^2 + 8x + 5} = 3$

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Practice Problems: Unit 10 Lesson 3 page 13, Q-R

Q

	p^2	$2p$
	$10p$	20

R

	ac	$3a$	$4a^2$

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Answer Key:

Once you have completed the problems, check your answers for page 17 here.

Q

	p	2
p	p^2	$2p$
10	$10p$	20

$(p + 2)(p + 10) = p^2 + 12p + 20$

$\frac{p^2 + 12p + 20}{p + 2} = p + 10$

$\frac{p^2 + 12p + 20}{p + 10} = p + 2$

R

	c	3	4a
a	ac	$3a$	$4a^2$

$a(c + 3 + 4a) = ac + 3a + 4a^2$

$\frac{ac + 3a + 4a^2}{a} = c + 3 + 4a$

$\frac{ac + 3a + 4a^2}{c + 3 + 4a} = a$

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Practice Problems: Unit 10 Lesson 3 page 17, S

(S) Here are four ways to set up the expression $w^2 + 11w + 30$ inside an area model. Three of the ways don't help or don't work when you try to fill out the outside. Cross out the three that don't help or don't work, complete the one that does, and write an equation to match it.

(i)

	w^2	$11w$	30

(ii)

	w^2	$11w$
	10	20

(iii)

	w^2	$10w$
	w	30

(iv)

	w^2	$6w$
	$5w$	30

Essential Math 4

Answer Key:

Once you have completed the problems, check your answers for page 17 here.

(S) Here are four ways to set up the expression $w^2 + 11w + 30$ inside an area model. Three of the ways don't help or don't work when you try to fill out the outside. Cross out the three that don't help or don't work, complete the one that does, and write an equation to match it.

(i)

w^2	$11w$	30

Not helpful - the only common factor is 1.

(ii)

w^2	$11w$
10	20

Doesn't work

(iii)

w^2	$10w$
w	30

Doesn't work

(iv)

	w	6
w	w^2	$6w$
5	$5w$	30

$w^2 + 11w + 30 = (w + 5)(w + 6)$

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