Virtual Learning

Essential Math 4

Unit 10 Lesson 5: Zero Product Property

April 28, 2020

Essential Math 4
Lesson 5: April 28, 2020

Learning Target:
I can solve algebraic equations using different methods.

You will explore the use of area models to factor algebraic expressions and solve for the zeros.

Directions:

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

Bell Work
April 28, 2020

Use an area model to factor. Complete the model and equation.

⑥ $x^2 - 2x - 15 =$ _____

	x	___
x	x^2	
___		-15

Bell Work
Answer Key
April 28, 2020

Use an area model to factor. Complete the model and equation.

⑥ $x^2 - 2x - 15 =$ $(x-5)(x+3)$

	x	-5
x	x^2	$-5x$
3	$3x$	-15

(Factors can be written in either order.)

Practice Problems p.31
Solve the following:

STUFF TO MAKE YOU THINK

15 Who Am I?

- $(t+2)(u-6)(h-3)=0$
- $(t+2)(h-3)=12$
- $(t+2)=4$

h	t	u

16 Who Am I?

- $(h+4)(t-2)(u-9)=0$
- $(h+4)(t-2)=25$
- $(h+4)=5$

h	t	u

Practice Problems Key (p.31):

STUFF TO MAKE YOU THINK

15 Who Am I?

- $(t+2)(u-6)(h-3)=0$
- $(t+2)(h-3)=12$
- $(t+2)=4$

h	t	u
6	2	6

16 Who Am I?

- $(h+4)(t-2)(u-9)=0$
- $(h+4)(t-2)=25$
- $(h+4)=5$

h	t	u
1	7	9

Practice Problems: Unit 10 Lesson 5 (page 31)

Factor to solve each equation.

(17) $x^2 - 36 = 0$

$x =$ _____ or _____

(18) $3y - 6 = 0$

$y =$ _____

(19) $3z^2 + 18z = 0$

$z =$ _____ or _____

Answer Key:

Once you have completed the problems, check your answers for page 31 here.

Factor to solve each equation.

17 $x^2 - 36 = 0$

Can be factored with an area model: $(x+6)(x-6) = 0$

OR add 36 and solve

$x^2 = 36$

$x =$ -6 or 6

18 $3y - 6 = 0$

Can be factored:

$3(y - 2) = 0$

OR solved as $3y = 6$

$y =$ 2

19 $3z^2 + 18z = 0$

	z	6
3z	$3z^2$	18z

$3z(z + 6) = 0$

$z =$ 0 or -6

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Practice Problems:
Unit 10
Lesson 5
page 31

TOUGH STUFF

Factor to solve each equation.

20 $a^2 + 6a + 11 = 3$

$-3 \quad -3$

For factoring to help, the product of the factors must be 0.

21 $b^2 + 8b + 9 = -6$

$a =$ _____ or _____

$b =$ _____ or _____

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Answer Key:
Once you have completed the problems, check your answers for the previous slide here.

TOUGH STUFF

Factor to solve each equation.

20 $a^2 + 6a + 11 = 3$

$-3 \quad -3$

$a^2 + 6a + 8 = 0$

	a	4
a	a^2	$4a$
2	$2a$	8

$(a + 2)(a + 4) = 0$

$a =$ -2 or -4

For factoring to help, the product of the factors must be 0.

21 $b^2 + 8b + 9 = -6$

$b^2 + 8b + 15 = 0$

	b	5
b	b^2	$5b$
3	$3b$	15

$(b + 5)(b + 3) = 0$

$b =$ -5 or -3

Practice problems p. 31

(22) $c^2 + 4c - 20 = 12$

$c =$ _____ or _____

(23) $d^2 + 14d + 30 = 6$

$d =$ _____ or _____

Practice problems p.31 Key

(22) $c^2 + 4c - 20 = 12$

$c^2 + 4c - 32 = 0$

	c	8
c	c^2	$8c$
-4	$-4c$	-32

$(c + 8)(c - 4) = 0$

$c =$ -8 or 4

(23) $d^2 + 14d + 30 = 6$

$d^2 + 14d + 24 = 0$

	d	12
d	d^2	$12d$
2	$2d$	24

$(d + 12)(d + 2) = 0$

$d =$ -12 or -2

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Just for fun!

MysteryGrid **0, 7, 8, 9**

7	18,+	0,×	
		56,×	
16,+			
	16,+		0

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Just for fun!

Key

MysteryGrid **0, 7, 8, 9**

7 7	18,+ 9	0,× 0	8
9	0	56,× 8	7
16,+ 0	8	7	9
8	16,+ 7	9	0 0

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