



Virtual Learning

# Essential Math 4

## Unit 10

**Lesson 4: Products, Sums, and Signs**

**April 21, 2020**



# Essentials Math 4

## Lesson 4: April 21, 2020

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



## Essential Math 4

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 21, 2020**

**Use an area model to factor:**

$$x^2 - 8x - 9$$

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## Bell Work Answer Key

	$x$	$-9$	
$x$	$x^2$	$-9x$	$(x - 9)(x + 1)$
$1$	$1x$	$-9$	



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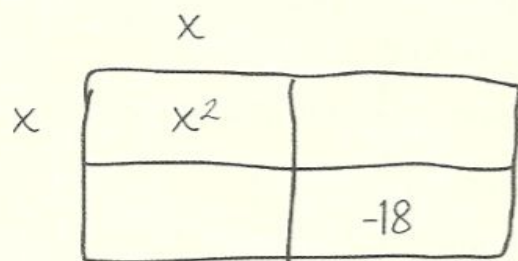
## Practice Problems

**Solve the problems on the following slides.  
After each slide, you will see an answer key.**

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When we seek the two numbers that have a specific sum and a specific product, it's sometimes easy to guess, but sometimes it helps to organize the search in a table. Use a table and an area model to factor each expression.

⑧  $x^2 - 7x - 18 = (x + \quad)(x - \quad)$



Factor Pairs of -18

Sum

Factor Pairs of -18	Sum
-1, 18	17
1, -18	

## Discuss & Write What You Think

- ⑨ We can see that one factor will require a negative number. Why not both?

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## Answer Key:

Once you have completed problems #8 and #9, check your answers here.

When we seek the two numbers that have a specific sum and a specific product, it's sometimes easy to guess, but sometimes it helps to organize the search in a table. Use a table and an area model to factor each expression.

⑧  $x^2 - 7x - 18 = (x + 2)(x - 9)$

	$x$	$2$
$x$	$x^2$	$2x$
$-9$	$-9x$	$-18$

### Discuss & Write What You Think

- ⑨ We can see that one factor will require a negative number. Why not both?

Since we're looking for two numbers whose product is negative, only one of the numbers can be negative.

### Factor Pairs of -18

### Sum

Factor Pairs of -18	Sum
$-1, 18$	$17$
$1, -18$	$-17$
$-2, 9$	$7$
$2, -9$	$-7$
$-3, 6$	$3$
$3, -6$	$-3$

There is no special order to these tables. Use a system that works for you.



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⑩  $p^2 - 2p - 8 =$

You *always* have the option to draw whatever helps you with the problem.

Factor Pairs of -8	Sum

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## Answer Key:

Once you have completed the problems, check your answers for #10 here.

⑩  $p^2 - 2p - 8 = (p - 4)(p + 2)$

	p	-4
p	$p^2$	$-4p$
2	$2p$	$-8$

You *always* have the option to draw whatever helps you with the problem.

(It's unnecessary to check 1 and -8 after seeing the result for -1 and 8.)

Factor Pairs of -8	Sum
-1, 8	7
-2, 4	2
2, -4	-2



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Practice Problems: Unit 10 Lesson 4

$$\textcircled{11} \quad z^2 - 8z + 15 =$$

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## Answer Key:

Once you have completed the problems, check your answers for page 18 here.

⑪  $z^2 - 8z + 15 = (z - 3)(z - 5)$

	$z$	$-5$
$z$	$z^2$	$-5z$
$-3$	$-3z$	$15$

Factor Pairs of 15      Sum

$-1, -15$	$-16$
$-3, -5$	$-8$



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