



Math Virtual Learning

HS/Essential Math II

May 15, 2020



High School/Essential Math 2
Lesson: May 15, 2020
(U4L6 Part II)

Objective/Learning Target

Use area model thinking to apply the distributive property to multiplication problems & Translate between symbolic expressions & area models & Recognize and create equivalent expressions using properties of operations.

Bellwork

Lesson

Terms are parts of an algebraic expression joined by addition or subtraction signs. In $-3x + y$, both $-3x$ and y are terms. Each term gets its own row or column in the model.

⑩ How many terms are in the expression $4x + 5yz$?

⑫ How many terms are in the expression $2b + c - d$?

⑪ How many terms are in the expression $-4wx$?

⑬ How many terms are in the expression $a - 6$?

Term Definition (Illustrated Mathematics Dictionary) - Math › definitions › term

In Algebra a term is either a single number or variable, or numbers and variables multiplied together. Terms are separated by + or - signs, or sometimes by divide

Lesson

Terms are parts of an algebraic expression joined by addition or subtraction signs. In $-3x + y$, both $-3x$ and y are terms. Each term gets its own row or column in the model.

⑩ How many terms are in the expression $4x + 5yz$?

2

⑪ How many terms are in the expression $-4wx$?

1

⑫ How many terms are in the expression $2b + c - d$?

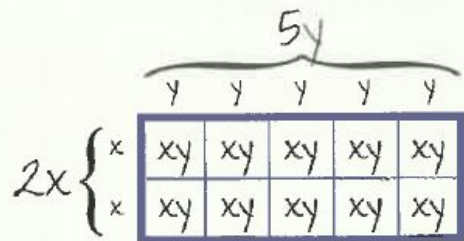
3

⑬ How many terms are in the expression $a - 6$?

2

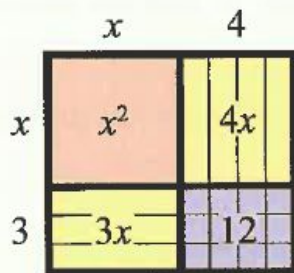
Lesson

- ⑮ *Like terms* (terms that are alike except for their coefficient) can be combined. You've seen this idea before. If you have 10 pieces that are all xy , then you can combine those terms.



$$2x \cdot 5y = \underline{\hspace{2cm}}$$

- ⑯ Notice how the like terms are all the same shape with the same area, like the individual little yellow x by 1 rectangles in this image.



$$(x + 3)(x + 4) =$$

$$x^2 + \text{yellow} + 12$$

- ⑰ Circle all the expressions that can be combined into one term, and write the combined term underneath.

Ⓐ $3x + 5x$

Ⓑ $7w - 2w$

Ⓒ $3x - 2w$

Ⓓ $2w - 7w$

Ⓔ $5x - 2$

Ⓕ $6 + x$

Ⓖ $6x + x$

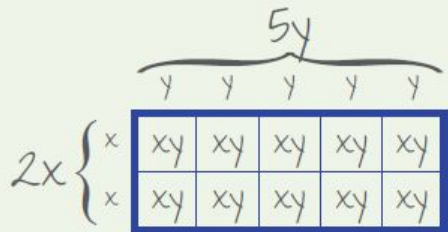
Ⓗ $5xy - xy$

Ⓘ $4xy + 3x$

Ⓙ $8z + 8y$

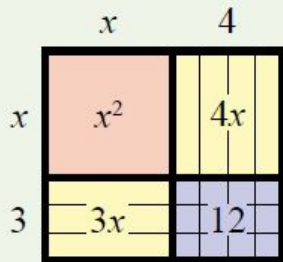
Lesson

- ⑮ Like terms (terms that are alike except for their coefficient) can be combined. You've seen this idea before. If you have 10 pieces that are all xy , then you can combine those terms.



$$2x \cdot 5y = \underline{10xy}$$

- ⑯ Notice how the like terms are all the same shape with the same area, like the individual little yellow x by 1 rectangles in this image.



$$(x + 3)(x + 4) =$$

$$x^2 + 7x + 12$$

- ⑰ Circle all the expressions that can be combined into one term, and write the combined term underneath.

(A) $3x + 5x$
 $8x$

(B) $7w - 2w$
 $5w$

(C) $3x - 2w$

(D) $2w - 7w$
 $-5w$

(E) $5x - 2$

(F) $6 + x$

(G) $6x + x$
 $7x$

(H) $5xy - xy$
 $4xy$

(I) $4xy + 3x$

(J) $8z + 8y$

Stuff to Make You Think

Fill in the missing spaces

26

	_____	_____
b	ab	$4bc$
_____	$7a$	

$$(b + \underline{\hspace{2cm}})(\underline{\hspace{2cm}} + \underline{\hspace{2cm}})$$
$$= ab + 4bc + 7a + \underline{\hspace{2cm}}$$

34

	_____	_____	$-3z$	_____
a	ax	$4ay$		$8a$
_____	$-3bx$		$9bz$	
$5c$		$20cy$		$40c$

Remember you are “taking out” what is in common to all terms for each row or column

ANSWERS Stuff to Make You Think

26

	<u>a</u>	<u>4c</u>
b	ab	4bc
<u>7</u>	7a	28c

$$(b + \underline{7})(\underline{a} + \underline{4c})$$
$$= ab + 4bc + 7a + \underline{28c}$$

34

	<u>x</u>	<u>4y</u>	-3z	<u>8</u>
a	ax	4ay	-3az	8a
<u>-3b</u>	-3bx	-12by	9bz	-24b
5c	5cx	20cy	-15cz	40c

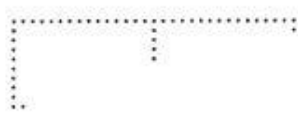
Additional Practice

Draw an area model and use it to multiply.

Ⓒ $2(5b - 4) =$ _____



Ⓗ $y(z - 1) =$ _____



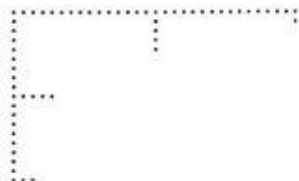
Ⓘ $-7n(3m - 4) =$ _____

Ⓙ $w(2p + c - 7) =$ _____



Ⓚ $3x(y - 5z + 8) =$ _____

Ⓛ $(y - 5)(x + 7) =$ _____



Ⓜ $(a - 3)(b + 8) =$ _____

Additional Practice Key

Draw an area model and use it to multiply.

$$\textcircled{G} \quad 2(5b - 4) = \frac{10b - 8}{5b \quad -4}$$

2	10b	-8
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$$\textcircled{H} \quad y(z - 1) = \frac{yz - y}{z \quad -1}$$

y	yz	-y
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$$\textcircled{I} \quad -7n(3m - 4) = \frac{-21nm + 28n}{3m \quad -4}$$

-7n	-21nm	28n
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$$\textcircled{J} \quad w(2p + c - 7) = \frac{2pw + cw - 7w}{2p \quad c \quad -7}$$

w	2pw	cw	-7w
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$$\textcircled{K} \quad 3x(y - 5z + 8) = \frac{3xy - 15xz + 24x}{y \quad -5z \quad 8}$$

3x	3xy	-15xz	24x
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$$\textcircled{L} \quad (y - 5)(x + 7) = \frac{xy + 7y - 5x - 35}{y \quad -5}$$

x	xy	-5x
7	7y	-35

$$\textcircled{M} \quad (a - 3)(b + 8) = \frac{ab - 3b + 8a - 24}{b \quad 8}$$

a	ab	8a
-3	-3b	-24

Today you learned to use area model thinking to apply the distributive property to multiplication problems & Translate between symbolic expressions & area models & Recognize and create equivalent expressions using properties of operations.

For additional practice, click the link: [Solve Me Mystery Grids](#)