Combining Like Terms and Distributive Property: Activity #1

Contents: 9 shape cards, 1 deck of cards, papers for recording practice

Directions: (start with 2-9 of each suit – keep other cards for future activities)

1. Shape cards will determine our variables (x or y) red cards are negative numbers – <u>black cards are positive numbers</u>

2. Shuffle and deal 5 out shape cards

3. Shuffle and deal 1 card on top of each shape

4. Write out what was dealt in the order it was dealt

> •Number on the card (don't forget the sign)
> •Variable on the shape card (one does not have a variable so sign and # only

5. Move shape cards to line up like terms

6. Write the new line

7. Add the columns of like terms to get the simplified expression and write your final answer.

# Combining Like Terms and Distributive Property: Activity #2

Contents: pocket with directions page, papers to record practice, dry erase markers, colored templates for guided practice, and 1 dice

Directions:

1. Take markers and white page with space to record work

2. Roll dice. Record the number in the star.

3. Roll dice. Record the number in the triangle.

4. On the recording paper write the problem you created

> •Star number (variable + triangle number)

5. Use distributive property: multiply sides and top of each box

> •Star number × variable and Star number × triangle number (record this)

6. Simplify: star number variable + number (record this)
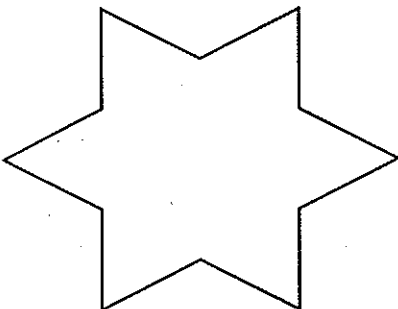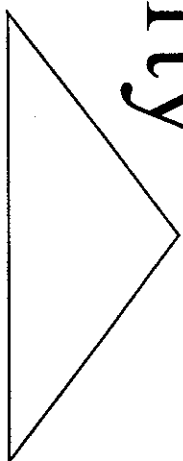
Distributive Property

k
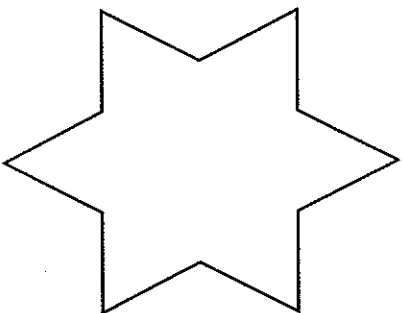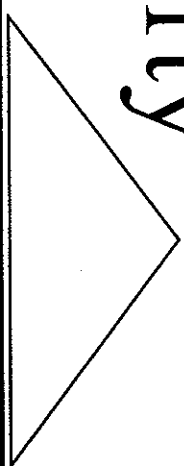
Directions: If you roll a "1", pick a number between 7 and 10 to use in its place.

1. Roll the dice. Write the number in the star.
2. Roll the dice again. Write this number in the triangle.
3. Now, use the distributive property to write an expression.

Distributive Property

X

Directions:

1. Roll the dice. Write corresponding letter in the star.
2. Roll the dice again. Write the corresponding letter in the triangle.
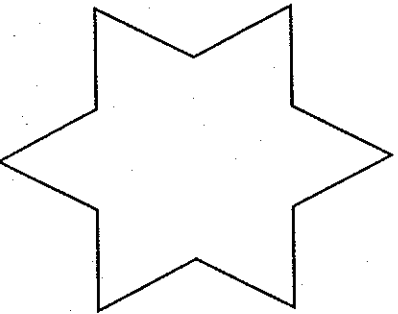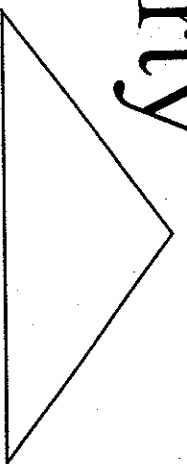3. Now, use the distributive property to write an expression.

1 = y
2 = m
3 = p
4 = w
5 = c
6 = b

Distributive Property

x

Directions:

1. Roll the dice. Write corresponding letter in the star.

2. Roll the dice again. Write the corresponding letter in the triangle.

3. Now, use the distributive property to write an expression.

1 = y

2 = m

3 = p

4 = w

5 = c

6 = b

Distributive Property

Record 20 expressions for 20 PRIDE points -   NAME_____

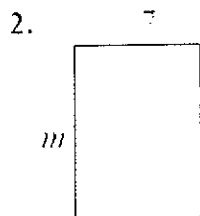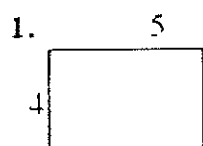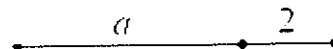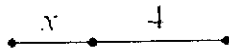| Ex. $3(k + 5)$ $3(k) + 3(5)$ $3k + 15$	Ex. $2(k + 4)$ $2(k) + 2(4)$ $2k + 8$
1.	11.
2.	12.
3.	13.
4.	14.
5.	15.
6.	16.
7.	17.
8.	18.
9.	19.
10.	20.

Distributive Property Using Area   NAME _____

Write the expression that represents the area of each rectangle.   Area = length x width

1.
5

4

2.
7

m

3.
a

3

4.
x

x
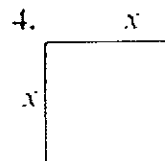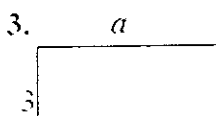
Write the expression that represents the total length of each segment.

x 9

x 4

a 2
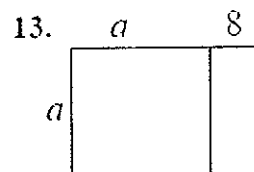
5. _____

6. _____

7. _____

Find the area of each box in the pair.

8.
x 3

4

9.
a 9

7

10.
x 2

x
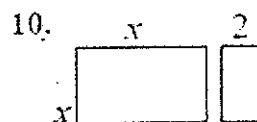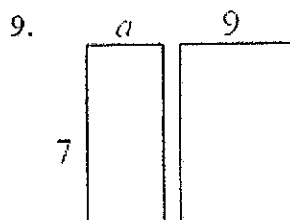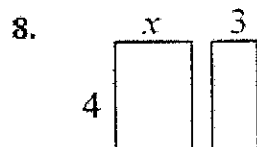
Write the area of each rectangle as the product of *length × width* and also as a sum of the areas of each box.

11.
x 7

5

12.
x 12

x

13.
a 8

a
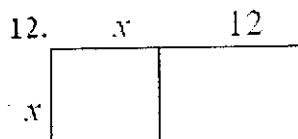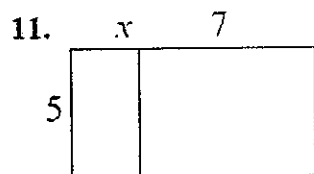
AREA AS PRODUCT	AREA AS SUM
5(x+7)	5x+35

AREA AS PRODUCT	AREA AS SUM

AREA AS PRODUCT	AREA AS SUM

This process of writing these products as a sum uses the distributive property.

Use the distributive property to re-write each expression as a sum. You may want to draw a rectangle on a separate page to follow the technique above.

14. $4(x+7) =$ _____

15. $7(x-3) =$ _____

16. $-2(x+4) =$ _____

17. $x(x+9) =$ _____
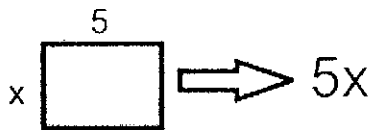
18. $a(a-1) =$ _____

19. $3m(m+2) =$ _____

20. $-4(a-4) =$ _____

21. $a(a-12) =$ _____

# Area Representation of the Distributive Property

Area = length x width

The first section introduces students to the idea of writing the area of a rectangle as an expression of the length × width, even when one or more dimensions may be represented by a variable.

$$5 \quad \boxed{} \Rightarrow 5x$$

The next section aquaints students with the thought of writing the length of a segment consisting of two parts as a *sum*.

$$\overset{x}{\bullet\!-\!-\!-\!\bullet}\overset{8}{-\!-\!-\!-\!\bullet} \Rightarrow x+8$$

The key section is next, having students represent the area of each rectangle *two ways* to distribute the common factor among all parts of the expression in parentheses.

$$5(x+7) \Rightarrow \quad \Rightarrow \quad \Rightarrow 5x+35$$
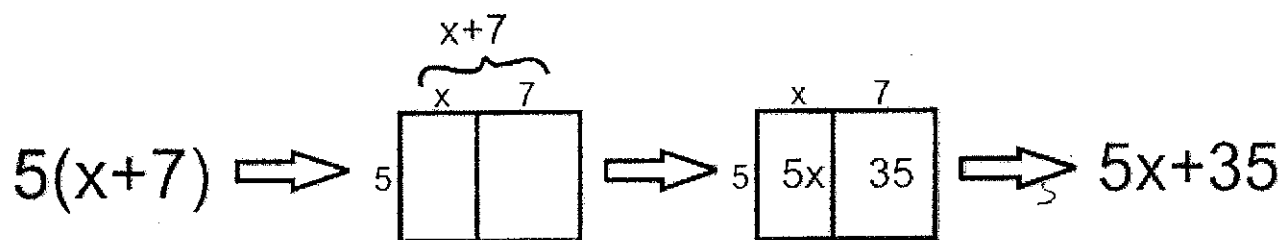
Practice Activity #1

(11)

- Contents: 9 shape cards, +/- number cards, papers to record practice

- Directions:
  - 1. Shape cards will determine our variables (x or y) and constant
  - 2. Shuffle and deal 5 out shape cards
  - 3. Shuffle and deal 1 integer on top of each shape
  - 4. Write out what was dealt in the order it was dealt
    - ¤ Number on the card (don't forget the sign)
    - ¤ Variable on the shape card (one does not have a variable so sign and # only)
  - 5. Move stacks of cards to line up like terms
  - 6. Write the new line
  - 7. Add the columns of like terms to get the simplified expression.
    - • Write your final answer.

COMBINING LIKE TERMS

Deal 5 shape cards and 5 integer cards Move like terms to under each other Add the like terms up Write final answer in ABC order with constant last.	Record : +2y -4x +10 +2x -5y <u>-5y +2x</u> -3y -2x +10 -2x -3y +10

COMBINING LIKE TERMS

Deal 5 shape cards and 5 integer cards Move like terms to under each other Add the like terms up Write final answer in ABC order with constant last.	Record : +2y -4x +10 +2x -5y <u>-5y +2x </u> -3y -2x +10 -2x -3y +10