Task #11: Distributive Property Using Area

Distributive Property Using Area

NAME Key

Write the expression that represents the area of each rectangle. $A=lw$

1.

	5
4	20

2.

	7
m	$7m$

3.

	a
3	$3a$

4.

	x
x	x^2

$A=x^2$ $P=4x$

Find the area of each box in the pair.

5.

	x	3
4	$4x$	12

6.

	a	9
7	$7a$	63

7.

	x	2
x	x^2	$2x$

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

8. x — 9 : $x+9$

9. x — 4 : $x+4$

10. a — 2 : $a+2$

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	$5x$	35

AREA AS PRODUCT (×)	AREA AS SUM (+)
$5(x+7)$	$5x+35$

12.

	x	12
x	x^2	$12x$

AREA AS PRODUCT	AREA AS SUM
$x(x+12)$	x^2+12x

13.

	a	8
a	a^2	$8a$

AREA AS PRODUCT	AREA AS SUM
$a(a+8)$	a^2+8a

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. $4(x+7)=$ $4x+28$

15. $7(x-3)=$ $7x-21$

16. $-2(x+4)=$ $-2x-8$

17. $x(x+9)=$ x^2+9x

18. $a(a-1)=$ a^2-a

19. $3m(m+2)=$ $3m^2+6m$

20. $-4(a-4)=$ $-4a+16$

21. $a(a-12)=$ a^2-12a

Task #12: Factoring a Common Factor Using Area

Factoring a Common Factor Using Area

NAME Key

Fill in the missing information for each: dimensions, area as product, and area as sum

1.

	x	6
2	2x	12

p→ 2(x+6)
S→ 2x+12

2.

	X	4
5	5x	20

p→ 5(x+4)
S→ 5x+20

3.

	X	8
6	6x	48

p→ 6(x+8)
S→ 6x+48

4.

	x	3
10	10x	30

p→ 10(x+3)
S→ 10x+30

Fill in the missing dimensions from the expression given.

5. $5x+35 = 5(X+7)$

	X	7
5	5X	35

6. $2x+12 = 2(X+6)$

	X	6
2	2x	12

7. ~~$3x-21$~~ $3x+21 = 3(x+7)$

	X	7
3	3x	21

8. $7x+21 = 7(X+3)$

	X	3
7	7X	21

9. ~~$+3x+15$~~ $= +3(X+5)$

	X	5
3	3x	15

10. ~~$+5x+45$~~ $= 5(x+9)$

	X	9
5	5x	45

This process of writing a sum or difference as the product of factors is called **factoring**.

Factor these:

11. $4x-16 = 4(x-4)$

12. $-7x-35 = -7(x+5)$

13. $9x-81 = 9(x-9)$

14. $4x+18 = 2(2x+9)$