

Worksheet 3-1: Expanding Binomials**Binomials:****Binomials are algebraic expressions with two terms.**

Examine the following algebraic expressions. Circle all the binomials.

$x^2 + 2x - 3$

$3xy$

$4xy + 2$

$8a$

$x^2 + y$

$5b - 7$

Recall: Distributive Property

When expanding brackets, we distribute the property of the number or math operation outside the brackets to every term inside the brackets.

e.g., $3(x+4) = 3x+12$

and

$-(x+1) = -x-1$

Example 1:

(a) $(x+4)(x+5)$

$$= x^2 + 5x + 4x + 20$$
$$= x^2 + 9x + 20$$

(d) $(2m-4)(m+3)$

$$= 2m^2 + 6m - 4m - 12$$
$$= 2m^2 + 2m - 12$$

(b) $(y+6)(y+3)$

(c) $(a+7)(a-1)$

(e) $(n-10)(3n-9)$

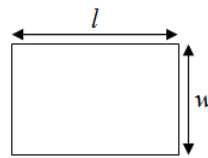
(f) $(2w-3)(5w-7)$

Worksheet 3-2: Algebraic Modelling of Areas

The area of any rectangle can be found using the formula:

$$A = lw$$

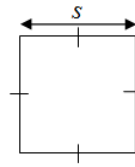
where A is the area of the rectangle,
 l is the length of the rectangle, and
 w is the width of the rectangle.



The area of any square can be found using the formula:

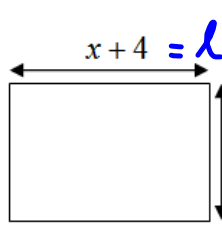
$$A = s^2$$

where A is the area of the square, and
 s is the side length of the square,



1. Write a simplified algebraic expression to represent the area of each figure.

(a)



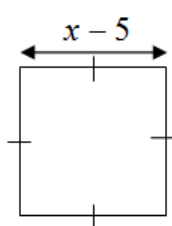
$$A = (x+4)(x+3)$$

$$= x^2 + 3x + 4x + 12$$

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

The area is $x^2 + 7x + 12$.

(b)



$$A = (x-5)^2$$

$$= (x-5)(x-5)$$

$$= x^2 - 5x - 5x + 25$$

$$= x^2 - 10x + 25$$

The area is $x^2 - 10x + 25$.

P. 239 #5-11