

Name: _____

Date: _____

M8H HW Ch2 Lesson 5 : Simplifying Polynomials - Distributions and FOIL

1. Indicate whether if the following pairs are liketerms are not. If they are, simplify the expression:

a) $3ab + 5ba$	b) $5a^2b + 8ab^2$	c) $9^2ab + 3ab$	d) $12abc - 11cab$
e) $4xyz + 9xy^2$	f) $8(a + b) - 2ab$	g) $\frac{1}{2ab} + 3ab$	h) $\frac{1}{3}cd + 3d^2c$
i) $3mn + 5(nm + 1)$	j) $3a^3b^2 - 12b^3a^2$	k) $12y^3x^2z^2v - 5z^2x^2y^3w$	l) $\frac{3a^3b}{a} + 8ba^2$

2. Expand and Simplify each of the following equations:

a) $3(2x + 3y + 1)$	b) $3a(2a^2 + 3ab)$	c) $4a - 3(2a + 1)$
d) $6(3 - 2x) + 7x$	e) $2(2x + 1) - 3(1 - 2x)$	f) $3(2 + 4x) - 7x$
g) $-4(2x + x - x) - 3x$	h) $3(x - 1) + 2(2x + 1)$	i) $-3(-5x - 1) + 2x(1 - x)$
j) $3x(6x + 3y + 1) - 4y(2x)$	k) $-3x(4x + 3y) - 9y(2x + 1)$	l) $7x^2(2y - 1) - 8y(3x^2 - x)$

m) $3(2ab - 2b - a) - 7ab - 7b$	n) $-3ab(7a + 12b + 11) - 7b(a^2 + 10ab - 2)$
o) $3(x - y) + 8(y - 2x) - 3(3y + 3)$	p) $2x(3x^2 + 1) - 3x^2(3 - 3x) - 8(3x^2 + 9x^3)$
q) $-11(3x - 8y) - 5(3y - 9x) - 4(11y - 12 + 3x)$	r) $-11(3x - 8y) - 5(8y - 3x) - 4(13x - 8y)$

3. FOIL and Simplify the following

a) $2x(2x + 3)$	b) $4x(5x - 3)$	c) $(2x + 1)(4x)$
d) $(2x - 3)(4x + 1)$	e) $(6x - 3)(3x + 2)$	f) $(4x - 3)(4x + 3)$

g) $(3x+4)(2x-3)$	h) $(4x-1)(3x+2)$	i) $(7x-1)(4x-5)$
j) $(12x-3)(8x-10)$	k) $(6x-8)(4x+6)$	l) $(2x+1)(3x^2+5x-6)$

4. Given that the area of a rectangle is represented by: $x^2 + 7x + 12$, find an expression for the length and width in terms of "x".
5. A large rectangle has a length of $3x+8y$ and a width of $5x+2y$. A small square with lengths of $2x+y$ is cut out of the rectangle. What is the area of the remaining shape?
6. Given that the width of a rectangle is: $6x$ and the area is: $6x^3 + 30x^2 + 24x$, what is the length of the rectangle in terms of "x"?

7. Challenge: Given that the width of a rectangle is: $(6x + 3)$ and the area is: $6x^3 + 33x^2 + 21x + 3$, what is the length of the rectangle in terms of “x”?

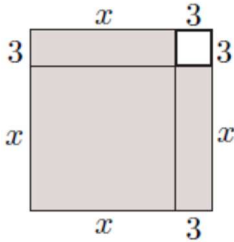
8. Given the area of each rectangle, find the area of the unknown rectangle and the dimensions of each side:

x^2	$6x$
$-4x$	?

$2x^2$	?
$-4x$	-6

$6x^2$	$-4x$
$-15x$	?

9. If the shaded region below has area 150cm^2 , what is the value of “x”?



13.
In the diagram, $ABCDEFG$ is a room having square corners, with $EF = 20\text{ m}$, $AB = 10\text{ m}$, and $AG = GF$. The total area of the room is 280 m^2 . A wall is built from A to D creating two rooms of equal area. What is the distance, in metres, from C to D ?

- (A) 15
- (B) $\frac{50}{3}$
- (C) 12
- (D) 13
- (E) $\frac{40}{3}$

