Name _____ **Key** _____ Date _____ Period _____

Polynomials Product and Evaluate Homework

Multiply Using the Box method

1. $(x-3)(x-7)$

	x	-3
x	x^2	$-3x$
-7	$-7x$	$+21$

$\boxed{x^2 - 10x + 21}$

2. $(x+6)(x-6)$ $=0x$

	x	$+6$
x	x^2	$+6x$
-6	$-6x$	-36

$\boxed{x^2 - 36}$

3. $(x+5)^2$

	x	$+5$
x	x^2	$5x$
$+5$	$5x$	$+25$

$\boxed{x^2 + 10x + 25}$

4. $(6-x)(6+x)$

	6	$-x$
6	36	$-6x$
$+x$	$6x$	$-x^2$

$\boxed{-x^2 + 36}$

5. $(x+4)(x^2 - 2x - 4)$

	x^2	$-2x$	-4
x	x^3	$-2x^2$	$-4x$
$+4$	$4x^2$	$-8x$	-16

$\boxed{x^3 + 2x^2 - 12x - 16}$

Write the equivalent expression of the product using your choice of method

6. $(3x+9)^2$

$(3x+9)(3x+9)$

F O I L
$9x^2 + 27x + 27x + 81$

$\boxed{9x^2 + 54x + 81}$

7. $(2x-1)(x+1)$

F O I L
$2x^2 + 2x - x - 1$

$\boxed{2x^2 + x - 1}$

8. $(3x+2)(3x-2)$

F O I L
$9x^2 - 6x + 6x - 4$

$\boxed{9x^2 - 4}$

Evaluate the following expressions

9. $3x^2 + 2x - 8$ for $x = -2$

$3(-2)^2 + 2(-2) - 8$

$\boxed{0}$

10. $-3x^2 + 4y^3$ for $x = -4$ and $y = 3$

$-3(-4)^2 + 4(3)^3$

$\boxed{60}$

Solve

11. Find the area of a rectangle with a length of $(2x-1)$ cm and a width of $(x+8)$ cm.

	$x+8$
$2x-1$	

F O I L
$2x^2 + 12x - x - 6$

$\boxed{2x^2 + 11x - 6}$ sq. cm

12. Tammie bought $(3x+5)$ bottles of nail polish at $\$(x-9)$ each. Find the amount of money Tammie spent.

$(3x+5)(x-9)$

	$3x$	$+5$
x	$3x^2$	$5x$
-9	$-27x$	-45

$\boxed{3x^2 - 22x - 45}$ dollars