Quiz!

1. Multiply. [8]

a) $5(x-3)$

$= 5x - 15$

	x	-3
5	$5x$	-15

b) $-3x(2x^2 - 4x + 1)$

$= -6x^3 + 12x^2 - 3x$

	$2x^2$	$-4x$	1
$-3x$	$-6x^3$	$12x^2$	$-3x$

c) $(m+n)(q-t)$

$= qm + qn - mt - nt$

	m	n
q	qm	qn
$-t$	$-mt$	$-nt$

d) $(5x-3y)(2w+z)$

$= 10wx - 6wy + 5xz - 3yz$

	$5x$	$-3y$
$2w$	$10wx$	$-6wy$
z	$5xz$	$-3yz$

2. Factor. [8]

a) $3x - 12$

$= 3(x-4)$

	x	-4
3	$3x$	-12

b) $6x^3 + 14x^2 - 8xy$

$= (2x)(3x^2 + 7x - 4y)$

	$3x^2$	$7x$	$-4y$
$2x$	$6x^3$	$14x^2$	$-8xy$

c) $xy + 5x - 2y - 10$

$= (x-2)(y+5)$

	y	5
x	xy	$5x$
-2	$-2y$	-10

d) $6ax - 4ay - 15bx + 10by$

$= 2a(3x-2y) - 5b(3x-2y)$

$= (3x-2y)(2a-5b)$

	$3x$	$-2y$
$2a$	$6ax$	$-4ay$
$-5b$	$-15bx$	$10by$

<u>4.4B More Mulitplying Binomials & Factoring Complex Trinomials</u>

A. <u>Multiplying Two Binomials</u>

Look for patterns!!!

1. $(2x+3y)(4x-y)$

$= 8x^2 + 10xy - 3y^2$

	$4x$	$-y$
$2x$	$8x^2$	$-2xy$
$3y$	$12xy$	$-3y^2$

2. $(x-3y)(5x-3y)$

$= 5x^2 - 18xy + 9y^2$

	$5x$	$-3y$
x	$5x^2$	$-3xy$
$-3y$	$-15xy$	$9y^2$

3. $(3x^2+2)(5x^2-1)$

$= 15x^4 + 7x^2 - 2$

	$5x^2$	-1
$3x^2$	$15x^4$	$-3x^2$
2	$10x^2$	-2

4. $(3a-4b)(5a-b)$

$= 15a^2 - 23ab + 4b^2$

Look for patterns!!!

	$5a$	$-b$
$3a$	$15a^2$	$-3ab$
$-4b$	$-20ab$	$4b^2$

5. $(3xy+2z)(2xy-5z)$

$= 6x^2y^2 - 11xyz - 10z^2$

	$2xy$	$-5z$
$3xy$	$6x^2y^2$	$-15xyz$
$2z$	$4xyz$	$-10z^2$

6. $(5x+2y)(3x+2y)$

$= 15x^2 + 16xy + 4y^2$

	$3x$	$2y$
$5x$	$15x^2$	$10xy$
$2y$	$6xy$	$4y^2$

7. $(3m+2n)(2m+5n)$

$= 6m^2 + 19mn + 10n^2$

	$2m$	$5n$
$3m$	$6m^2$	$15mn$
$2n$	$4mn$	$10n^2$

8. $(3x-4ab)(2x+5ab)$

$= 6x^2 + 7abx - 20a^2b^2$

Look for patterns!!!

	$2x$	$5ab$
$3x$	$6x^2$	$15abx$
$-4ab$	$-8abx$	$-20a^2b^2$

SKIP

B.   Factoring Complex Trinomials

**complex trinomials have a leading coefficient that is NOT ="1".

1. $3x^2 - 5xy + 2y^2$
   $= (3x - 2y)(x - y)$

	x	$-y$
$3x$	$3x^2$	$-3xy$
$-2y$	$-2xy$	$2y^2$

M 6
A −5
N −3,−2

2. $8a^2 + 6ab + b^2$
   $= (4a + b)(2a + b)$

Look for patterns!!!

	$2a$	b
$4a$	$8a^2$	$4ab$
b	$2ab$	b^2

M 8
A 6
N 4,2

3. $10x^4 + x^2 - 3$
   $= (5x^2 + 3)(2x^2 - 1)$

	$2x^2$	-1
$5x^2$	$10x^4$	$-5x^2$
3	$6x^2$	-3

M −30
A 1
N −5,6

Look for patterns!!!

4. $6x^2 - 17xy + 5y^2$
   $= (2x - 5y)(3x - y)$

	$2x$	$-5y$
$3x$	$6x^2$	$-15xy$
$-y$	$-2xy$	$5y^2$

M 30
A −17
N −15,−2

5. $6x^2 - xy - y^2$
   $= (3x - y)(2x - y)$

	$2x$	$-y$
$3x$	$6x^2$	$-3xy$
y	$2xy$	$-y^2$

M −6
A −1
N −3,2

6. $12m^2 - 16mn - 3n^2$
   $= (2m - 3n)(6m + n)$

	$2m$	$-3n$
$6m$	$12m^2$	$-18mn$
n	$2mn$	$-3n^2$

M −36
A −16
N −18,2

7. $x^2 + xy - 6y^2$
   $= (x - 2y)(x + 3y)$

Look for patterns!!!

	x	$3y$
x	x^2	$3xy$
$-2y$	$-2xy$	$-6y^2$

M −6
A 1
N 3,−2

8. $6x^2y^2 - xyz - 2z^2$
   $= (2xy + z)(3xy - 2z)$

	$3xy$	$-2z$
$2xy$	$6x^2y^2$	$-4xyz$
z	$3xyz$	$-2z^2$

M −12
A −1
N −4,3

9. $2 - 11x + 12x^2$
   $= (4x - 1)(3x - 2)$

	$4x$	-1
$3x$	$12x^2$	$-3x$
-2	$-8x$	2

M 24
A −11
N −3,−8

10. $3x^2 + 2xy - 8y^2$
   $= (3x - 4y)(x + 2y)$

Look for patterns!!!

	x	$2y$
$3x$	$3x^2$	$6xy$
$-4y$	$-4xy$	$-8y^2$

M −24
A 2
N 6,−4