4.7 Mulitplying & Factoring Perfect Square Trinomials

A. Multiplying a Squared Binomial (perfect square)

Look for patterns!!!

1. $(x+5)(x+5)$ $=(x+5)^2$

$= x^2+10x+25$

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

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

$= x^2-6x+9$

	x	-3
x	x^2	$-3x$
-3	$-3x$	9

3. $(2x+1)(2x+1)$

$= 4x^2+4x+1$

	$2x$	1
$2x$	$4x^2$	$2x$
1	$2x$	1

4. $(2x+3)^2$

$= 4x^2+12x+9$ $\quad 2x(3)(2) = 12x$

Look for patterns!!!

	$2x$	3
$2x$	$4x^2$	$6x$
3	$6x$	9

5. $(4x-1)^2$ SKIP

6. $(3x+5)^2$ SKIP

7. $(2x-3y)^2$

$= 4x^2-12xy+9y^2$

8. $(2x+3y)^2$ SKIP

Look for patterns!!!

9. $(5x^2-2z^3)^2$ SKIP

10. $(x+4x^2y)^2$ $\quad 2(x)(4x^2y)$

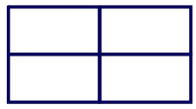
$= x^2+8x^3y+16x^4y^2$

B. Factoring a Perfect Square Trinomial

perfect square $\square^2 + 2\square\{\ \}+\{\ \}^2$ perfect square

square root of first term — square root of second term

1. $x^2 - 4x + 4$ $= (x-2)^2$ middle $2(2x)$? $= 4x$? ✓



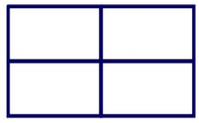
2. $x^2 + 14x + 49$ $= (x+7)^2$

Look for patterns!!!

middle $2(x)(7)$? ✓

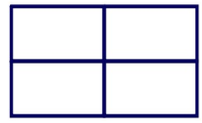


3. $4x^2 - 4x + 1$ $= (2x-1)^2$



Look for patterns!!!

4. $25x^2 + 20x + 4$ $= (5x+2)^2$

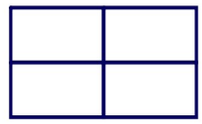


5. $9x^2 + 24x + 16$

SKIP



6. $4x^2 - 20x + 25$



7. $9x^2 - 42xy + 49y^2$

Look for patterns!!!

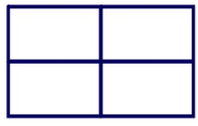


8. $x^2y^2 + 6xyz + 9z^2$



9. $16x^4 - 8x^2y + y^2$

Look for patterns!!!



10. $4a^6 + 12a^3b + 9b^2$

SKIP



Nov 16-11:48 AM