

Distributive Property!

Unit 3: Polynomials

3.11 Difference of Squares

Square - Square

	Sum	Product	Integers	Polynomial	Factored Form
i)	-6	-16	-8, 2	$x^2 - 6x - 16$	$(x-8)(x+2)$
ii)	-15	-16	-16, 1	$x^2 - 15x - 16$	$(x-16)(x+1)$
iii)	0	-16	-4, 4	$x^2 + 0x - 16 = x^2 - 16$	$(x+4)(x-4)$
iv)	0	-64	-8, 8	$x^2 - 64$	$(x-8)(x+8)$
v)	0	-25	-5, 5	$x^2 - 25$	$(x-5)(x+5)$

\* What pattern do you notice?

Distributive Property!

Unit 3: Polynomials

\*GCF First\*

**Steps to factor a difference of squares:**

- 1) Make two sets of brackets.
- 2) Root the first term.
- 3) Root the second term.
- 4) Separate them with a + and - sign.

Ex.) Factor.

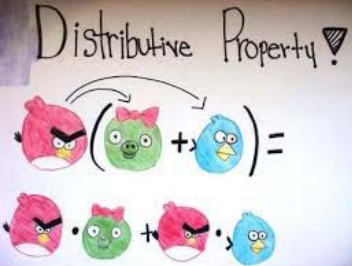

a)  $\sqrt{x^2 - 9}$

=  $(x+3)(x-3)$

b)  $\sqrt{x^2 - 225}$

=  $(x+15)(x-15)$

Distributive Property!

Ex.) Factor, if possible.

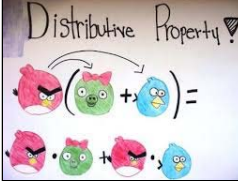

a)  $\sqrt{16t^2 - 49}$   
 $= (4t - 7)(4t + 7)$

b)  $\sqrt{100 - y^2}$   
 $= (10 - y)(10 + y)$

c)  $4x^2 + 25$   
 ↑  
 Sum  
 not factorable

d)  $64 - 9a^2b^2$   
 $= (8 - 3ab)(8 + 3ab)$

Distributive Property!

Ex.) Factor, if possible.

a)  $144p^2q^2 - 4$   
 $= 4(36p^2q^2 - 1)$   
 $= 4(6pq + 1)(6pq - 1)$

b)  $3x^3 - 27x$   
 $= 3x(x^2 - 9)$   
 $= 3x(x + 3)(x - 3)$

c)  $2x^4 - 32$   
 $= 2(x^4 - 16)$   
 $= 2(x^2 + 4)(x^2 - 4)$   
 $= 2(x^2 + 4)(x - 2)(x + 2)$