

Difference of Squares

Pre-Practice: Multiply the following binomials using FOIL.

a) $(x-6)(x+6)$ **b)** $(x-4)(x+4)$ **c)** $(x-8)(x+8)$

The answers above are called differences of squares...

How many terms are there in the answers? _____

What is the sign between the terms? _____

What do you notice about each term? They're _____ squares.

Factoring Difference of Squares

To factor a difference of squares,

- 1. Take the square roots of each term.**
- 2. Use these square roots to create two binomial factors with a '-' and a '+' in them.**

Examples

Use difference of squares to factor each expression.

a) $x^2 - 9$

b) $x^2 - 81$

c) $x^2 - 64$

d) $16x^2 - 9$

e) $x^2 + 4$

Practice – Factoring

1. Use difference of squares to factor the following expressions.

a) $x^2 - 49$

b) $100 - x^2$

c) $4x^2 - 9$

d) $a^2 - 16$

e) $9x^2 - 25$

f) $x^2 + 25$

2. Trinomial factor the following expressions.

a) $x^2 + 14x + 45$

b) $x^2 - 3x - 28$

c) $x^2 - 12x + 32$

3. Common factor each expression.

a) $12x - 8$

b) $3x + 18x^2$

c) $-7x^2 - 14$

4. Common factor each expression then use difference of squares or trinomial factoring.

a) $3x^2 + 24x + 45$

b) $-2x^2 + 50$

c) $2x^2 - 10x - 48$