Multiplying Special Binomials

Bell Work:

1. **What is the key word for multiplying binomials?**

2. **What is a monomial?**

3. **Multiply** $(3a + 7)(4a - 9)$.

4. **What is the range for the constant parent function?**

Multiplying Special Binomials

Multiply each pair of binomials.

1. $(a-3)^2 = (a-3)(a-3)$

   Write it twice.

Multiplying Special Binomials

Multiply each pair of binomials.

1. $(a-3)^2 = (a-3)(a-3) = a^2$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Multiplying Special Binomials

Multiply each pair of binomials.

1. $(a-3)^2 = (a-3)(a-3) = a^2 - 3a$

   Write it twice.

   FOIL Multiplication

   First: Multiply the 1st terms in each binomial.

   Outside: Multiply the outside terms.

Multiplying Special Binomials

Multiply each pair of binomials.

1. $(a-3)^2 = (a-3)(a-3) = a^2 - 3a - 3a$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Inside: Multiply the inside terms.

The inside and outside terms are the same. It will always do this.

Multiplying Special Binomials

Multiply each pair of binomials.

1. $(a-3)^2 = (a-3)(a-3) = a^2 - 3a - 3a + 9$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Inside: Multiply the inside terms.

Last: Multiply the last terms in each binomial.

Multiplying Special Binomials

Multiply each pair of binomials.

1. $(a-3)^2 = (a-3)(a-3) = a^2 - 3a - 3a + 9 = a^2 - 6a + 9$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Inside: Multiply the inside terms.

Last: Multiply the last terms in each binomial.

Add similar monomials.

Multiplying Special Binomials

Multiply each pair of binomials.

2. $(b+8)^2 = (b+8)(b+8)$

Write it twice.

Multiplying Special Binomials

Multiply each pair of binomials.

2. $(b+8)^2 = (b+8)(b+8) = b^2$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Multiplying Special Binomials

Multiply each pair of binomials.

2. $(b+8)^2 = (b+8)(b+8) = b^2 + 8b$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Multiplying Special Binomials

Multiply each pair of binomials.

2. $(b+8)^2 = (b+8)(b+8) = b^2 + 8b + 8b$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Rewrite the outside terms.

The inside and outside terms are the same. It will always do this.

Multiplying Special Binomials

Multiply each pair of binomials.

2. $(b+8)^2 = (b+8)(b+8) = b^2 + 8b + 8b + 64$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Rewrite the outside terms.

Last: Multiply the last terms in each binomial.

Multiplying Special Binomials

Multiply each pair of binomials.

2. $(b+8)^2 = (b+8)(b+8) = b^2 + 8b + 8b + 64 = b^2 + 16a + 64$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Rewrite the outside terms.

Last: Multiply the last terms in each binomial.

Add similar monomials.

Multiplying Special Binomials

Multiply each pair of binomials.

3. $(2c-5d)^2=(2c-5d)(2c-5d) = 4c^2 -10cd -10cd +25d^2$

$= 4c^2 -20cd + 25d^2$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Rewrite the outside terms.

Last: Multiply the last terms in each binomial.

Add similar monomials.

Multiplying Special Binomials

Multiply each pair of binomials.

4. $(-4e^2 + 3f^2)^2 = (-4e^2 + 3f^2)(-4e^2 + 3f^2) =$

Write it twice.

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Rewrite the outside terms.

Last: Multiply the last terms in each binomial.

Add similar monomials.

$$16e^4 - 12e^2f^2 - 12e^2f^2 + 9f^2$$

$$= 16e^4 - 24e^2f^2 + 9f^4$$

Multiplying Special Binomials

Multiply each pair of binomials.

5. $(3g-5)(3g+5) = 9g^2 + 15g - 15g - 25 = 9y^2 - 25$

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Outside: Multiply the outside terms.

Inside: Multiply the inside terms.

Last: Multiply the last terms in each binomial.

Add similar monomials.

The inside and outside terms cancelled each other. You only need to do First and Last. You don't need to do Outside and Inside.

Multiplying Special Binomials

Multiply each pair of binomials.

6. $(7h + 1)(7h - 1) = 49h^2 - 1$

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Last: Multiply the last terms in each binomial.

Multiplying Special Binomials

Multiply each pair of binomials.

7. $(-6j - 5k)(-6j + 5k) = 36j^2 - 25k^2$

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Last: Multiply the last terms in each binomial.

Multiplying Special Binomials

Multiply each pair of binomials.

8. $(7m^2 + 5n^2)(7m^2 - 5n^2) = 49m^4 - 25n^4$

FOIL Multiplication

First: Multiply the 1st terms in each binomial.

Last: Multiply the last terms in each binomial.

Multiplying Special Binomials

Assignment:

Fluency Practice: Multiplying Special Binomials Worksheet