

# Multiplying Binomials

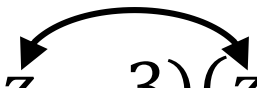
## Bell Work:

1. Solve and show all work.  $4(a + 6) = 7(a - 1)$
2. What is a binomial?
3. Multiply  $3a^2b^3c(7a^4b^2c^3 - 5ac^2)$ .
4. What is the range for the absolute value parent function?

# Multiplying Binomials

Multiply each pair of binomials.

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

A curved arrow points from the 'z' in the first binomial to the 'z' in the second binomial, with a small arrowhead pointing to the resulting 'z^2'.


*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> terms in each binomial.*

# Multiplying Binomials

Multiply each pair of binomials.

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



*FOIL Multiplication*


*First: Multiply the 1<sup>st</sup> terms in each binomial.*

*Outside: Multiply the outside terms.*

# Multiplying Binomials

Multiply each pair of binomials.

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



*FOIL Multiplication*


*First: Multiply the 1<sup>st</sup> terms in each binomial.*

*Outside: Multiply the outside terms.*

*Inside: Multiply the inside terms.*

# Multiplying Binomials

Multiply each pair of binomials.

$$1. (z - 3)(z + 6) = z^2 + 6z - 3z - 18$$


*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> terms in each binomial.*

*Outside: Multiply the outside terms.*

*Inside: Multiply the inside terms.*

*Last: Multiply the last terms in each binomial.*

# Multiplying Binomials

**Multiply each pair of binomials.**

$$1. (z - 3)(z + 6) = z^2 + 6z - 3z - 18 = z^2 + 3z - 18$$

*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> terms in each binomial.*

*Outside: Multiply the outside terms.*

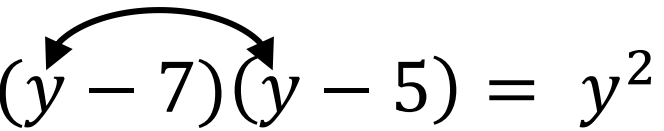
*Inside: Multiply the inside terms.*

*Last: Multiply the last terms in each binomial.*

*Add similar monomials.*

# Multiplying Binomials

Multiply each pair of binomials.

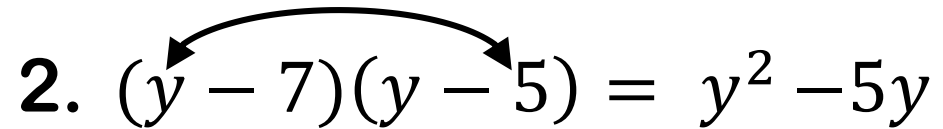
$$2. (y - 7)(y - 5) = y^2$$


*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> terms in each binomial.*

# Multiplying Binomials

Multiply each pair of binomials.

$$2. (y - 7)(y - 5) = y^2 - 5y$$


*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> terms in each binomial.*

*Outside: Multiply the outside terms.*



# Multiplying Binomials

Multiply each pair of binomials.

$$2. (y - 7)(y - 5) = y^2 - 5y - 7y$$

*FOIL Multiplication*


*First: Multiply the 1<sup>st</sup> terms in each binomial.*

*Outside: Multiply the outside terms.*

*Inside: Multiply the inside terms.*

# Multiplying Binomials

Multiply each pair of binomials.

$$2. (y - 7)(y - 5) = y^2 - 5y - 7y + 35$$


*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> terms in each binomial.*

*Outside: Multiply the outside terms.*

*Inside: Multiply the inside terms.*

*Last: Multiply the last terms in each binomial.*

# Multiplying Binomials

**Multiply each pair of binomials.**

$$2. (y - 7)(y - 5) = y^2 - 5y - 7y + 35 = y^2 - 12y + 35$$

*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> 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 Binomials

**Multiply each pair of binomials.**

**3.**  $(2x - 5)(4x + 3) = 8x^2 + 6x - 20x - 15 = 8x^2 - 14x - 15$

*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> 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 Binomials

**Multiply each pair of binomials.**

$$4. (-8w + 3)(5w - 9) = -40w^2 + 72w + 15w - 27 = -40w^2 + 87w - 27$$

*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> 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 Binomials

**Multiply each pair of binomials.**

$$5. (3u - 7v)(-4u - 9v) = -12u^2 - 27uv + 28uv + 63v^2 = -12u^2 + uv + 63v^2$$

*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> 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.*

*You don't need a 1  
before the uv. But if  
you have one, it is OK.*

# Multiplying Binomials

**Multiply each pair of binomials.**

$$6. (7r - s)(8r + 3s) = 56r^2 + 21rs - 8rs - 3s^2 = 56r^2 + 13rs - 3s^2$$

*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> 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 Binomials

**Multiply each pair of binomials.**

$$7. (6p^2 + 5pq)(4pq - 11q^2) = 24p^3q - 66p^2q^2 + 20p^2q^2 - 55pq^3$$

*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> 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.*

$$= 24p^3q - 46p^2q^2 - 55pq^3$$



# Multiplying Binomials

**Multiply each pair of binomials.**

$$8. (7m^2 - 5mn)(-6mn + 13n^2) = -42m^3n + 91m^2n^2 + 30m^2n^2 - 65mn^3$$

*FOIL Multiplication*

*First: Multiply the 1<sup>st</sup> 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.*

$$= -42m^3n + 121m^2n^2 - 65mn^3$$

# Multiplying Binomials

**Assignment:**

**Fluency Practice: Multiplying Binomials Worksheet**