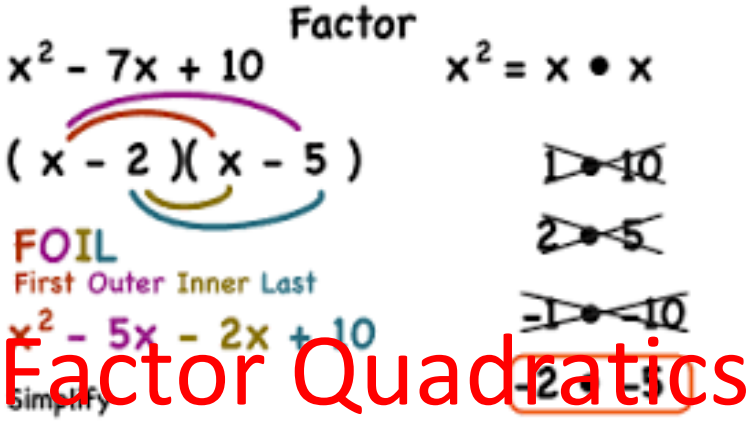
2.2 Notes

Factoring Quadratics



Factor Quadratics

I Can (Rewrite expressions in different forms using mathematical properties)

Bellwork:

List all the factor pairs:

1. 6 2. 24 3. 48

Multiply the following binomials.

4. (3x – 4)(x – 2) 5. (7x – 6)(x – 3)

You just practiced multiplying two binomials. Today we will be **factoring**, which is the reverse of multiplying.

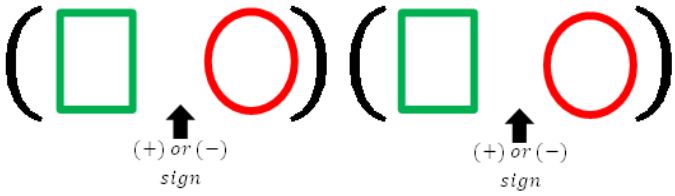
$$(x + 2)(x + 5) = x^2 + 5x + 2x + 10$$

$$= x^2 + 7x + 10$$

Signs

Equation → $3x^2 + 7x + 2$
(Standard form)

1st term | middle term | last term

Guess → 

Check:

Signs

Equation →
(Standard form)

$$3x^2 - 7x + 2$$

1st term — middle term — last term

Factor Pairs — Factor Pairs

Guess → (□ ○) (□ ○)

(+) or (−) sign — (+) or (−) sign

Check:

Signs

Equation →
(Standard form)

$$3x^2 - 5x - 2$$

1st term — middle term — last term

Factor Pairs — Factor Pairs

Guess → (□ ○) (□ ○)

(+) or (−) sign — (+) or (−) sign

Check:

Signs

Equation → $3x^2 + 5x - 2$
(Standard form)

1st term — middle term — last term

Factor Pairs — Factor Pairs

Guess → (□ ○) (□ ○)

(+) or (−) sign — (+) or (−) sign

Check:

Example:

Equation → $2x^2 - 7x + 5$
(Standard form)

1st term — middle term — last term

Factor Pairs — Factor Pairs

Guess → (□ ○) (□ ○)

(+) or (−) sign — (+) or (−) sign

Check:

Example:

Equation → $5x^2 + 6x - 8$
(Standard form)

1st term — middle term — last term

Factor Pairs — Factor Pairs

Guess → (□ ○) (□ ○)

(+) or (−) sign — (+) or (−) sign

Check:

Example:

Equation → $x^2 - 10x + 24$
(Standard form)

1st term — middle term — last term

Factor Pairs — Factor Pairs

Guess → (□ ○) (□ ○)

(+) or (−) sign — (+) or (−) sign

check:

Example:

Equation → $2x^2 + 13x + 6$
(Standard form)

1st term — middle term — last term

Factor Pairs — Factor Pairs

Guess → (□ ○) (□ ○)

(+) *or* (−) *sign* — (+) *or* (−) *sign*

check:

Practice:

Equation → $5x^2 - 8x - 13$
(Standard form)

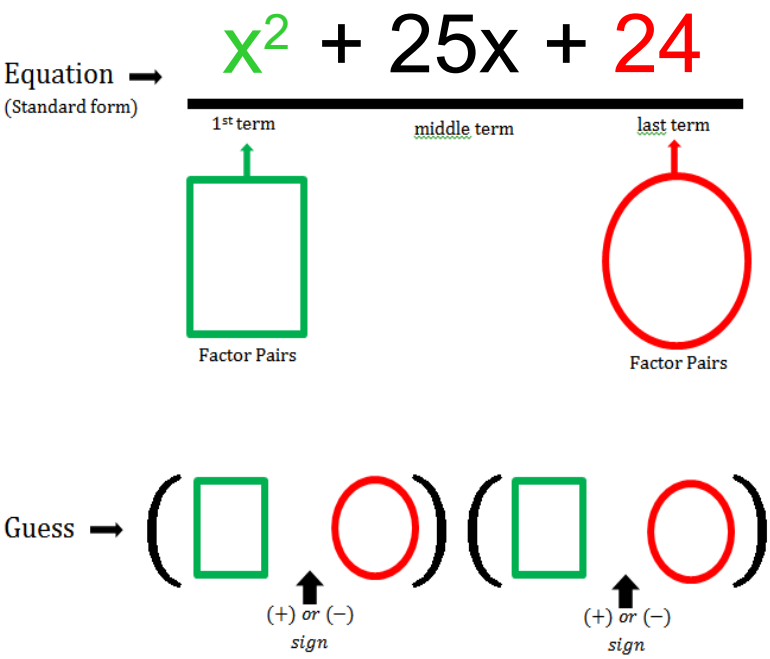
1st term — middle term — last term

Factor Pairs — Factor Pairs

Guess → (□ ○) (□ ○)

(+) *or* (−) *sign* — (+) *or* (−) *sign*

Practice:



Special Case: Difference of perfect squares:

$$a^2 - b^2 = (a - b)(a + b)$$

Factor:

$x^2 - 16$

$m^2 - 81$

$4x^2 - 9$

Factor:

$5m^2 + 17m - 12$

$2n^2 + 15n + 7$

$4m^2 + 8m + 3$

$n^2 - 6n - 16$