



Howdy!!!!

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Algebra 1

Day 6 - Factor Trinomials (-, +)
Practice Assignment

Practice

Date: _____ Block: _____

Factor the expressions:

1. $x^2 - 6x + 5$

$$(x-5)(x-1)$$

2. $7x^2 - 45x + 18$

3. $\frac{x^3 - 9x^2 + 18x}{x}$

$$x(x^2 - 9x + 18)$$

$$x(x-6)(x-3)$$

4. $x^2 - 8x + 16$

5. $2x^2 - 19x + 45$

6. $4x^2 - 40x + 96$

$$(2x-9)(x-5) \begin{array}{r} -10x \\ 9x \\ \hline -19x \end{array}$$

7. $3x^2 - 25x + 28$

$$(3x-4)(x-7)$$

8. $x^2 - 12x + 27$

$$\begin{array}{r} 21x \\ 4x \\ \hline 25x \end{array}$$

9. $\frac{5x^2 - 35x + 50}{5}$

$$5(x^2 - 7x + 10)$$

$$5(x-5)(x-2)$$

10. Which of the following b values makes the trinomial $x^2 + bx + 18$ not factorable?

- A. -11 ✓
 B. -9 ✓
 C. 7 ✗
 D. 19

$$x^2 - 11x + 18$$

$$(x-9)(x-2)$$

$$x^2 + 7x + 18$$

$$(\quad)(\quad)$$

$$x^2 - 9x + 18$$

$$(x-6)(x-3)$$

$$x^2 + 19x + 18$$

$$(x+18)(x+1)$$



Today's Notes

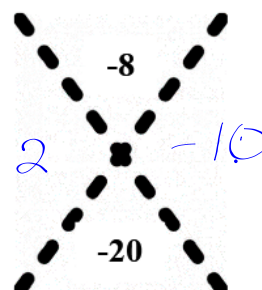
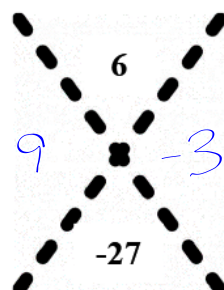
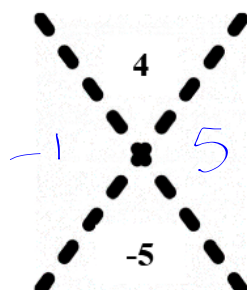
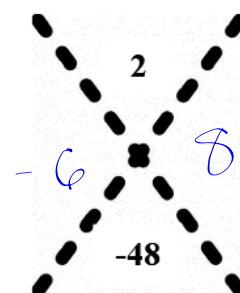
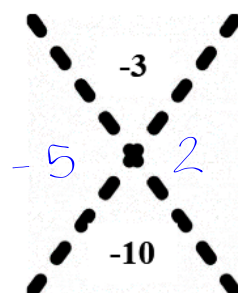
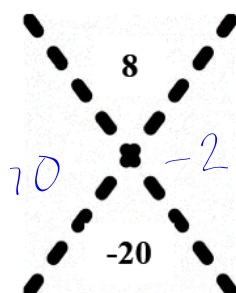
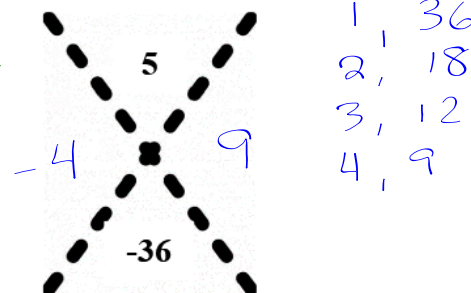
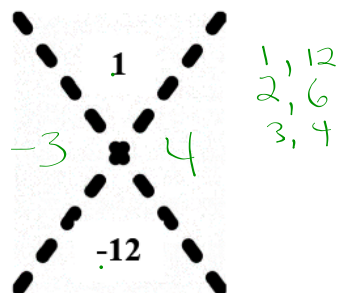
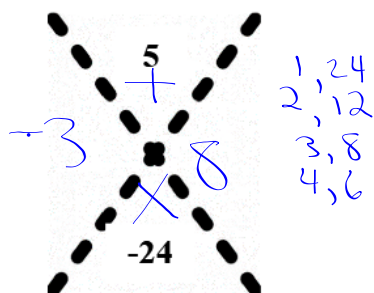
Algebra 1

Unit 7: Quadratic Expressions

Notes



0:02:54

Day 7 – Factor Polynomials $(-, -)$ & $(+, -)$ **Directions:** Complete the puzzles below like yesterday.

What types of patterns did you notice?

Review and Connect: Multiply the following binomials together.

a. $(x + 4)(x - 7)$

b. $(2x - 5)(x + 6)$

c. $(x + 6)(x - 6)$

d. $(3x - 7)(x + 1)$

Algebra 1

Unit 7: Quadratic Expressions

Notes

You probably noticed that the multiplying number was negative every time, but the adding number could be positive or negative, depending on which number got the negative sign. If the larger number had the negative sign, the adding number was negative and if the smaller number was negative, the adding number was positive.

$$x^2 + bx - c = (\quad) (\quad)$$

$$x^2 - bx - c = (\quad) (\quad)$$

Example 1: Factor $x^2 + 5x - 6$

| General Steps | Examples |
|--|----------|
| 1. Check to see if the polynomial has a greatest common factor. | |
| 2. Set up two empty sets of parenthesis below the polynomial. | |
| 3. The first numbers must multiply together to equal the first term, ax^2 . | |
| 4. The second numbers must multiply together to equal the last term c . | |
| 5. Multiply the outside terms and then the inside terms. When those terms are added together, they should equal the middle term, b . | |

Handwritten example for $x^2 + 5x - 6$:

$x^2 + 5x - 6$

Factor pairs for -6 : $(-1, 6)$ and $(2, -3)$

Factorization: $(x - 1)(x + 6)$

Check: $(x - 1)(x + 6) = x^2 + 6x - x - 6 = x^2 + 5x - 6$

Example 2: Factor $x^2 - 16$

| General Steps | Examples |
|--|----------|
| 1. Check to see if the polynomial has a greatest common factor. | |
| 2. Set up two empty sets of parenthesis below the polynomial. | |
| 3. The first numbers must multiply together to equal the first term, ax^2 . | |
| 4. The second numbers must multiply together to equal the last term c . | |
| 5. Multiply the outside terms and then the inside terms. When those terms are added together, they should equal the middle term, b . | |

Handwritten example for $x^2 - 16$:

$x^2 - 16$

Factor pairs for -16 : $(-4, 4)$ and $(4, -4)$

Factorization: $(x + 4)(x - 4)$

Check: $(x + 4)(x - 4) = x^2 - 4x + 4x - 16 = x^2 - 16$

$$x^2 - 16$$

#3

$$5x^2 - 31x - 28$$

$$(5x + 4)(x - 7)$$

AC method for factoring $5x^2 - 31x - 28$:

| | | | |
|--------|------|-----|------|
| $-35x$ | $4x$ | 1 | 28 |
| $-31x$ | | 1 | 14 |
| | | 2 | |

4, 7

#4

$$\frac{9x^2}{3} + \frac{21x}{3} - \frac{60}{3}$$

$$3(3x^2 + 7x - 20)$$

$$3(3x - 5)(x + 4)$$

$\begin{array}{r} 12x \\ -5x \\ \hline \end{array}$

$\begin{array}{l} 5, 4 \\ 1, 20 \\ 2, 10 \end{array}$

Additional Practice

Algebra 1

Unit 7: Quadratic Expression

Practice

Day 7 – Factor Trinomials (-, - & +, -)

Name: _____

Practice Assignment

Date: _____ Block: _____

Factor the expressions:

1. $x^2 + 3x - 4$

2. $2x^2 + x - 10$

3. $2x^2 + 6x - 8$

4. $x^2 - 2x - 48$

5. $7x^2 - 34x - 5$

6. $4x^2 + 20x - 144$

7. $5x^2 + 17x - 12$

8. $x^2 + 5x - 14$

9. $2x^2 + 14x - 60$

Algebra 1

Unit7: Quadratic Expression

Practice

10. Which of the following b values makes the trinomial $x^2 + bx - 30$ not factorable?

- A. 7
- B. -7
- C. 1
- D. 11

11. Determine the values of k and n .

a. $(x + 4)(x + k) = x^2 + nx - 24$

b. $(x + k)(x - 1) = x^2 + nx - 5$

c. $(x + 5)(x + n) = x^2 + 3x - n$

12. If the area of a rectangle is $A = x^2 + 4x - 12$, answer the following:

a. What are the side lengths of the rectangle?

b. What is the perimeter of the rectangle?