9.1 Factoring Quadratic Polynomials - Worksheet 1

1

Translate the diagram of algebra tiles into an equation.

x^2	x	x	x	x	x
x	1	1	1	1	1
x	1	1	1	1	1
x	1	1	1	1	1
x	1	1	1	1	1

2 Use a diagram of algebra tiles to factor $x^2 + 8x + 15$. Draw the diagram and write the final equation.

You may want to do some actual scratch work on scratch paper for this.

3
Fill in the appropriate value into the boxes, then use the ac method to factor the given quadratic polynomial using a complete presentation.

$$x^2 + 8x + 15 \longrightarrow \begin{cases} \text{Multiply to } \boxed{} \\ \text{Add to } \boxed{} \end{cases}$$

9.2 Factoring Quadratic Polynomials - Worksheet 2

1   Use a diagram of algebra tiles to factor $2x^2 + 9x + 4$. Draw the diagram and write the final equation.

Put both of your x^2 tiles on the top left corner.

2   Fill in the appropriate value into the boxes, then use the ac method to factor the given quadratic polynomial using a complete presentation.

$$x^2 + 2x - 8 \longrightarrow \begin{cases} \text{Multiply to} \quad \boxed{} \\ \text{Add to} \quad \boxed{} \end{cases}$$

3   Fill in the appropriate value into the boxes, then use the ac method to factor the given quadratic polynomial using a complete presentation.

$$2x^2 - 3x - 28 \longrightarrow \begin{cases} \text{Multiply to} \quad \boxed{} \\ \text{Add to} \quad \boxed{} \end{cases}$$

9.3 Factoring Quadratic Polynomials - Worksheet 3

1 Fill in the appropriate value into the boxes, then use the ac method to factor the given quadratic polynomial using a complete presentation.

$$x^2 - 8x + 7 \longrightarrow \begin{cases} \text{Multiply to } \boxed{} \\ \text{Add to } \boxed{} \end{cases}$$

2 Fill in the appropriate value into the boxes, then use the ac method to factor the given quadratic polynomial using a complete presentation.

$$2x^2 + 5x + 2 \longrightarrow \begin{cases} \text{Multiply to } \boxed{} \\ \text{Add to } \boxed{} \end{cases}$$

3 Use the ac method to factor $x^2 - 7x + 10$ using a complete presentation.

You can continue to write out the two conditions if you want. Eventually, that will be a mental exercise

9.4   Factoring Quadratic Polynomials - Worksheet 4

1
Fill in the appropriate value into the boxes, then use the ac method to factor the given quadratic polynomial using a complete presentation.

$$3x^2 - 10x - 8 \longrightarrow \begin{cases} \text{Multiply to } \boxed{} \\ \\ \text{Add to } \boxed{} \end{cases}$$

2
Use the ac method to factor $x^2 + 6x + 9$ using a complete presentation.

3
Use the ac method to factor $x^2 - 3x - 40$ using a complete presentation.

4
Use the ac method to factor $2x^2 - 5x - 3$ using a complete presentation.

9.5   Factoring Quadratic Polynomials - Worksheet 5

1

Use the ac method to factor $x^2 + 9x + 20$ using a complete presentation.

2

Use the ac method to factor $4x^2 - 4x - 3$ using a complete presentation.

3   Factor $x^2 + 10x + 16$ and $x^2 - 10x + 16$, then compare the results. What do you notice about the factorizations?

Looking for patterns is a core element of mathematical thinking.

4   Factor $x^2 - 5x - 14$ and $x^2 + 5x - 14$, then compare the results. What do you notice about the factorizations?

9.6 Factoring Quadratic Polynomials - Worksheet 6

1 Suppose you are trying to factor a quadratic that has the following condition:

$$\begin{cases} \text{Multiply to a positive number} \\ \text{Add to a positive number} \end{cases}$$

What information can you conclude about the signs of the two numbers you're looking for?

If you're not sure, look back at some of the previous problems that meet this criteria and see if you can find the common feature.

2 Suppose you are trying to factor a quadratic that has the following condition:

$$\begin{cases} \text{Multiply to a positive number} \\ \text{Add to a negative number} \end{cases}$$

What information can you conclude about the signs of the two numbers you're looking for?

3 Suppose you are trying to factor a quadratic that has the following condition:

$$\begin{cases} \text{Multiply to a negative number} \\ \text{Add to a positive number} \end{cases}$$

What information can you conclude about the signs of the two numbers you're looking for?

4 Suppose you are trying to factor a quadratic that has the following condition:

$$\begin{cases} \text{Multiply to a negative number} \\ \text{Add to a negative number} \end{cases}$$

What information can you conclude about the signs of the two numbers you're looking for?