



### Identifying Expression Structures

#### Today's Standard

HSA.SSE.A2 - Use the structure of an expression to identify ways to rewrite it. For example, see  $x^2 - y^2$  as  $(x^2)^2 - (y^2)^2$ , thus recognizing it as a difference of squares that can be factored as  $(x^2 - y^2)(x^2 + y^2)$ .

| Cues                                                | Notes                                                                                                                                       |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| What is the structure of an expression?             | The structure of an expression refers to its form and the relationships between its components.                                             |
| How can $x^2 - y^2$ be rewritten?                   | $x^2 - y^2$ can be rewritten as $(x^2)^2 - (y^2)^2$ , which is a difference of squares and can be factored as $(x^2 - y^2)(x^2 + y^2)$ .    |
| What is the difference of squares?                  | The difference of squares is a specific algebraic identity where $a^2 - b^2 = (a - b)(a + b)$ .                                             |
| Why is recognizing expression structures important? | Recognizing expression structures helps in simplifying expressions and solving equations more efficiently.                                  |
| What are common misconceptions?                     | Common misconceptions include thinking that $x^2 - y^2$ cannot be factored and confusing the difference of squares with the sum of squares. |

#### Summary

Understanding the structure of expressions allows for simplification and efficient problem-solving in algebra. Key concepts include recognizing differences of squares and addressing common misconceptions.