Lesson 3: Writing Products as Sums and Sums as Products

Classwork

**Example 1**

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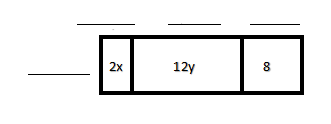
Exercise 1

Rewrite the expressions as a product of two factors.

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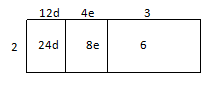
Example 2

Let the variables and stand for positive integers, and let ,, and represent the area of three regions in the array. Determine the length and width of each rectangle if the width is the same for each rectangle.



Exercise 2

* 1. Write the product and sum of the expressions being represented in the rectangular array.



* 1. Factor by finding the greatest common factor of the terms.

Exercise 3

For each expression, **write each sum as a product of two factors**. Emphasize the importance of **the distributive property**. Use various equivalent expressions to justify equivalency.

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Example 3

A new miniature golf and arcade opened up in town. For convenient ordering, a play package is available to purchase. It includes two rounds of golf and arcade tokens, plus off the regular price. There is a group of six friends purchasing this package. Let represent the cost of a round of golf, and let represent the cost of a token. Write two different expressions that represent the total amount this group spent. Explain how each expression describes the situation in a different way.

Exercise 4

* 1. What is the opposite of ? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. Using the distributive property, write an equivalent expression for part (a).

**Example 5**

**Rewrite**  in standard form. Justify each step, applying the rules for subtracting and the distributive property.

Exercise 5

Expand each expression and collect like terms.

Homework: Unit 5 Lesson 3

1. **Choose 3:** Write each expression as the product of two factors.
2. **Choose 3:** Write each sum as a product of two factors.
3. **Choose 2**: Write the sum as a product of two factors.
4. Xander goes to the movies with his family. Each family member buys a ticket and two boxes of popcorn. If there are five members of his family, let represent the cost of a ticket and represent the cost of a box of popcorn. Write two different expressions that represent the total amount his family spent. Explain how each expression describes the situation in a different way.
5. **Choose 2**: Write each expression in standard form.
6. **Choose 2:** Combine like terms to write each expression in standard form.