EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

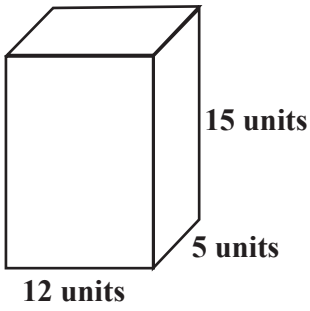
In Topic C, students replace letters with numbers and numbers with letters. They replace a letter with a specific number in order to evaluate an expression to determine its value. They connect this learning to geometry and find the area, perimeter, and volume of various figures, building on their knowledge of exponents. Students also explore and build identities, laying the foundation for solving equations.

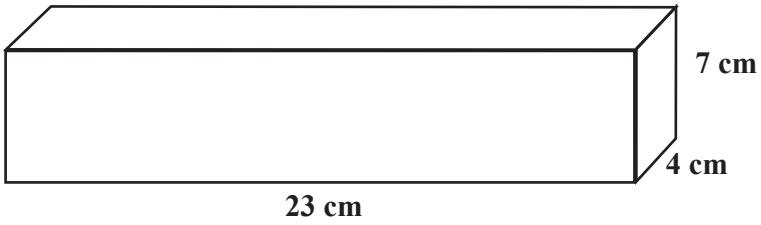
You can expect to see homework that asks your child to do the following:

- Replace the dimensions of a figure with numbers and calculate the area, perimeter, and/or volume. For example, if the side lengths of a rectangle are given as a and b, replace a and b with numbers and calculate the area ($a \times b$).
- Write an expression given specific information.
- State the **commutative properties** of addition and multiplication using given variables (e.g., $a + b = b + a$ and $a \times b = b \times a$).
- State the **additive identity property of zero**, using a given variable (e.g., $a + 0 = a$).
- State the **multiplicative identity property of one**, using a given variable (e.g., $a \times 1 = a$).
- Explain why there is no commutative property for subtraction and division.

SAMPLE PROBLEMS *(From Lessons 7 and 8)*

1. Complete the table for both figures. You may use a calculator.





Length of Rectangular Prism	Width of Rectangular Prism	Height of Rectangular Prism	Rectangular Prism's Volume Written as an Expression	Rectangular Prism's Volume Written as a Number
12 units	5 units	15 units	12 units × 5 units × 15 units	900 cubic units
23 cm	4 cm	7 cm	23 cm × 4 cm × 7 cm	644 cm^3

SAMPLE PROBLEMS *(continued)*

2. Replace the 3's in these number sentences with the letter a.

$$3 + 3 + 3 + 3 = 4 \times 3$$

$$3 \div 4 = \frac{3}{4}$$

$$\boldsymbol{a + a + a + a = 4 \times a}$$

$$\boldsymbol{a \div 4 = \frac{a}{4}}$$

Choose a value for a, and replace a with that number in the first equation. What do you observe?

If $a = 5$, then $5 + 5 + 5 + 5 = 4 \times 5$, and the result is a true number sentence.

Will all values of a result in a true number sentence? Experiment with different values before making your claim.

Yes, any number, even zero, can be used in place of the variable a.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

You can help at home in many ways. Here are some tips to help you get started.

- Create two examples that show why there is no commutative property for subtraction or division. For example, $7 - 5$ does not equal $5 - 7$, and $4 \div 2$ does not equal $2 \div 4$.
- Make flash cards with the four properties learned in this topic: the commutative properties of addition and multiplication, the additive identity property, and the multiplicative identity property. On one side, write the property; on the other side, write two or three examples. With your child, review these properties, encouraging him to explain each property in words.

TERMS

Additive identity: By definition, the number zero. (See *additive identity property of zero* below.)

Additive identity property of zero: The additive identity (zero) can be added to any number without changing the identity of the number (e.g., $11 + 0 = 11$ and $a + 0 = a$).

Commutative property: The order of an addition or multiplication problem may change, but the sum or product will remain the same.

Multiplicative identity: By definition, the number one. (See *multiplicative identity property of one* below.)

Multiplicative identity property of one: The multiplicative identity (one) can be multiplied by any number without changing the identity of the number (e.g., $4 \times 1 = 4$ and $a \times 1 = a$).