

## 1

**Family Letter****Dear Parent or Guardian:**

Students are often frustrated in math classes because they do not see how they can use the material in the real world. In our math class, however, we try to take mathematics beyond the classroom to a point where students realize and appreciate its importance in their daily lives.

In **Chapter 1, Algebra: Number Patterns and Functions**, your child will be learning about problem solving, patterns, prime factors, the order of operations, variables and expressions, and powers and exponents. Your child will also solve equations and find the area of rectangles. In the study of this chapter, your child will complete a variety of daily classroom assignments and activities and possibly produce a chapter project.

By signing this letter and returning it with your child, you agree to encourage your child by getting involved. Enclosed is an activity you can do with your child that practices how the math we will be learning in Chapter 1 might be tested. You may also wish to log on to **glencoe.com** for self-check quizzes and other study help. If you have any questions or comments, feel free to contact me at school.

Sincerely,

Signature of Parent or Guardian \_\_\_\_\_ Date \_\_\_\_\_

## 1

**Family Activity****State Test Practice**

**Fold the page along the dashed line. Work each problem on another piece of paper. Then unfold the page to check your work.**

1. For the table below, find the expression that can be used to find term  $n$  in the sequence. Which expression can be used to find  $n$ ?

Position, $n$	Value of Term
1	6
2	8
3	10
4	12
5	14
$n$	?

- A**  $3n + 2$                       **C**  $2n + 4$   
**B**  $2n - 2$                       **D**  $2n + 3$

2. What is the prime factorization for 125?

- A**  $5 \times 25$   
**B**  $5^3$   
**C**  $12 \times 5$   
**D**  $3^5$

**Fold here.**

**Solution**

1. *Hint: Remember to test at least three of the number pairs in the expressions before deciding on an answer. Some expressions may work for one of the pairs, but not all of them.*

While  $3n + 2$  will work for the second pair ( $3 \times 2 + 2 = 8$ ), it does not work with the rest of the number pairs (For example:  $3 \times 1 + 2 \neq 6$ ).

$2n - 2$  and  $2n + 3$  do not work for any of the pairs.

The expression that does work for all of them is  $2n + 4$ . This is modeled below:

$$\begin{aligned} 2 \times 1 + 4 &= 6 \\ 2 \times 2 + 4 &= 8 \\ 2 \times 3 + 4 &= 10 \\ 2 \times 4 + 4 &= 12 \\ 2 \times 5 + 4 &= 14 \end{aligned}$$

The answer is **C**.

**Solution**

2. *Hint: Prime factorization is the expression of a number as the product of prime numbers. A prime number is a number that is divisible only by one and itself.*

Both **A** and **C** are wrong because they contain numbers that are not prime.

If you find the value of the remaining two choices, you will find that

**B** ( $5^3 = 5 \times 5 \times 5$ ) equals 125 while  
**D** ( $3^5 = 3 \times 3 \times 3 \times 3 \times 3$ ) equals 243.

The answer is **B**.