

10

Family Letter

Dear Parent or Guardian:

Often real-world situations can be modeled using algebraic expressions, equations, and inequalities. Knowing how to write an equation to represent a problem situation from life such as comparing varying costs of several long-distance phone companies can make the problem easier to solve.

In **Chapter 10, Algebra: More Equations and Inequalities**, your child will learn how to simplify algebraic expressions, solve and write two-step equations that represent real-world situations, about sequences, to solve equations with variables on each side, about inequalities, and to use the guess and check problem-solving method. 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 10 might be tested. You may also wish to log on to **www.msmath3.com** for self-check quizzes and other study help. If you have any questions or comments, feel free to contact me at school.

Sincerely,

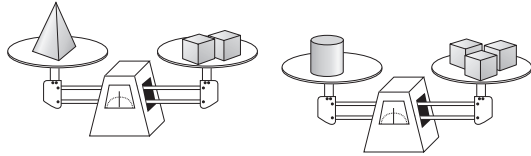
Signature of Parent or Guardian _____ Date _____

10 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. Suppose that one pyramid balances two cubes and one cylinder balances three cubes as shown in the figure.



Which statement is *not true*?

- A One pyramid and one cube balance three cubes.
- B One pyramid and one cube balance one cylinder.
- C One cylinder and one pyramid balance four cubes.
- D One cylinder and one cube balance two pyramids.

Fold here

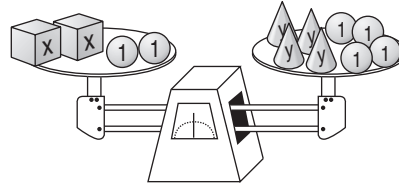
Solution

1. *Hint: Remember you can add or subtract equivalent items from each side of the scale to maintain the balance. You can also substitute equivalent items.*
- A You can add one cube to each side of the bottom scale. This is *true*.
 - B You can add one cube to each side of the bottom scale. So, one pyramid and one cube balance three cubes. In the top scale, three cubes balance one cylinder. This is *true*.
 - C You can add the items on the left part of the scales and items on the right side of the scales. So, one cylinder and one pyramid balance five cubes. This is *not true*.
 - D You can add one cube to each side of the top scale. So, one cylinder and one cube balance four cubes. The bottom scale shows that one pyramid balances two cubes. So, two pyramids will balance four cubes. This is *true*.

The answer is **C**.

2. The model represents the equation

$$2x + 4 = 4y + 4.$$



What is the value of x ?

- A $2y$
- B $4y$
- C $2y + 4$
- D $4y + 8$

Solution

2. *Hint: Make equivalent changes to both sides of the balance.*

Since there are four 1's on each side of the balance, they can be removed, resulting in a balance between $2x$ and $4y$. Since both are multiples of two, you can divide each side into two groups, or one x for $2y$, so the value of x is $2y$.

The answer is **A**.