

# Can You Top This?

Name \_\_\_\_\_

1. Select 6 different digits from the given set. Using the 6 digits form two 3-digit numbers which produce the largest possible sum.

[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]

$$\begin{array}{r} \triangle \triangle \triangle \\ + \triangle \triangle \triangle \\ \hline \end{array}$$

2. Is this the only possible solution? \_\_\_\_\_ Why or why not? \_\_\_\_\_
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3. Using the four given digits, form two 2-digit numbers with the smallest possible difference.

[3, 5, 7, 9]

$$\begin{array}{r} \triangle \triangle \\ - \triangle \triangle \\ \hline \end{array}$$

4. How would you rearrange the digits to obtain the largest possible difference?
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5. Using the four given digits once in each problem, complete the multiplication problems given to form the largest possible products.

[3, 5, 7, 9]

$$\begin{array}{r} \triangle \triangle \triangle \\ \times \triangle \\ \hline \end{array} \qquad \begin{array}{r} \triangle \triangle \\ \times \triangle \triangle \\ \hline \end{array}$$

## Thinking Cap

Use the digits 1, 3, 5, 7, 9 to form two 2-digit numbers and one 1-digit number such that the final product is the largest possible *even* product.

$$\triangle \times (\triangle \triangle - \triangle \triangle)$$

## TEACHER NOTES: *Can You Top This?*

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**Objective:** To apply number and operation sense to given problems.

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**Grade Level:** 4-5

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**Topic:** *Whole Number Operations/Problem Solving*

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### **Using the Activity:**

The focus of this activity is to use the calculator for rapid guess and check in order to find combinations of numbers that satisfy specified conditions. Students should record all combinations tried. Students may be inclined to stop working on the problem when they reach a solution, not knowing if it is the one that actually satisfies the condition. Have students work in groups. After a reasonable amount of time, call for answers from the groups.

When a correct answer is reached, it is important to analyze with students the relationships which help convince them that this is in fact the correct solution. Repeat the activity using a different set of digits for each problem. This gives students the opportunity to reinforce the concepts discussed.

*Answers:*    **1.**  $975 + 864 = 1839$     **2.** *Not the only possible answer. The key is that the largest digits must be in the largest places in any combination. For example,  $875 + 964 = 1839$  or  $965 + 874 = 1839$  or  $974 + 865 = 1839$ .*    **3.**  $93 - 75 = 18$     **4.**  $97 - 35 = 62$     **5.**  $753 \times 9 = 6777$ ,  
 $75 \times 93 = 6975$

### **Thinking Cap**

In this section, students must realize that to obtain an even product with one factor odd requires the other factor, obtained from the difference, to be even. Furthermore, to obtain the largest product requires the students to form the largest even difference possible.  $7 \times (95 - 13) = 574$