ORDER OF OPERATIONS

Denise is learning to make cupcakes using her grandmother's recipe card, but accidentally dropped the card on the floor. Help Denise order the steps correctly below.

_____ Combine flour and baking powder. Add to the creamed mixture and mix well.

_____ Bake for 30 to 40 minutes in the preheated oven. For cupcakes, bake 20 to 25 minutes.

_____ Preheat oven to 350 degrees F (175 degrees C).

_____ Grease and flour a 9x9 inch pan or fill a muffin pan with paper cups.

_____ In a medium bowl, cream together the sugar and the butter. Beat in the eggs, one at a time. Then, stir in the vanilla.

_____ Pour or spoon batter into the prepared pan.

ORDER OF OPERATIONS

- Order of operations provides a _____ for simplifying expressions so that all answers are the same.

- There are various ways to remember the order, including: _____

Use the visual to determine which operation should be performed first in the table below.
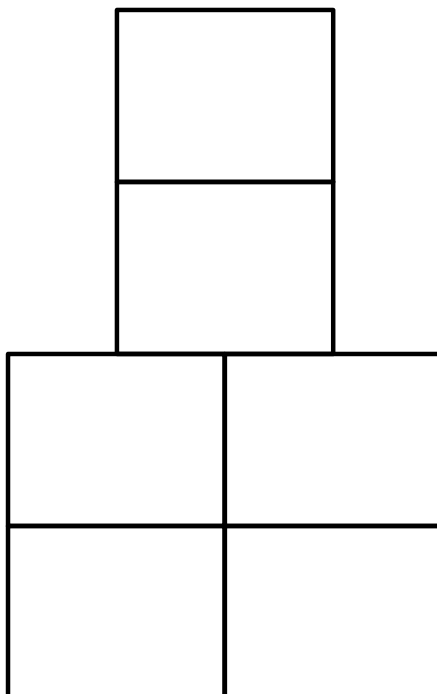
	FIRST STEP?
$(15 - 4) \cdot 9$	
$18 \div 6 \cdot 5$	
$(\frac{14}{2}) + 3^3$	
$2^4 - 15 + (12^2 - 4)$	
$\dfrac{4 \cdot 8}{5 - 3}$	

Simplify the expressions below using order of operations. Show your work for each line in the space given.

| 1. $18 + 6 \cdot 2^2$ _____ _____ _____ | 2. $(18 + 6) \cdot 2^2$ _____ _____ _____ |

a. Describe the difference between questions 1 and 2. How did this impact your solution?

Apply your understanding of order of operations to solve the questions below.

| 3. $15 + 8^2 - (9 + 14)$ | 4. $\dfrac{7^2 - 13}{24 - 18}$ | 5. $7 \cdot 8 - 5 + 3 \cdot 2^2$ |

6. Mrs. Wentzel asked students to write an expression that simplified to 13. Which student(s) completed the task correctly?

MAGGIE
$4^2 - 12 + 3 \cdot 3$

ALEXANDRA
$3 + 5 \cdot 2 - 3$

TAYLOR
$(2^3 - 4) \cdot 3 + 1$

7. Three students wrote a statement describing the steps to simplifying the expression $17 \cdot 6^2 \div (24 - 12)$. Who wrote a correct statement?

SHELBY
"After subtracting 12 from 24, you should multiply 6 by 6."

TATYANA
"The last step involves multiplying 17 by 3."

MAURICIO
"In one step of the problem, you will divide 12 by 12."

Summarize today's lesson:

Name _____

Date _____ Pd_____

ORDER OF OPERATIONS

Describe the error in each problem below.

1. $36 \div 3 + (3^2 \cdot 2)$ $36 \div 3 + 9 \cdot 2$ $36 \div 12 \cdot 2$ $3 \cdot 2$ 6 _____ _____ _____ _____	2. $9^2 \div 3 - (6 \cdot 4)$ $27 - 6 \cdot 4$ $21 \cdot 4$ 84 _____ _____ _____ _____

In questions 3-6, use your understanding of order of operations to simplify the expressions.

3. $(43 - 20) - 2 \cdot 5$	4. $(12 + 4) \div (11 - 7)$
5. $7 \cdot 8 - 3 \cdot 6 + 1$	6. $(14 + 8^2) \div 2 - 10$

Apply your understanding of order of operations to questions 7-8.

| 7. Which of the following is NOT true about the expression given below?

 $(10 + 4)^2 - 25$

 a. The 4 will be raised to the second power
 b. Subtracting 25 will be the last step
 c. The 10 and 4 will be added first
 d. 14 will be raised to the second power | 8. Raquel simplified the first step of the expression as shown.

 $(5 + 3^2) + 18 \rightarrow 8^2 + 18$

 What mistake did Raquel make, and what is the correct simplified version of the expression? |