

Name _____

Date _____

Criterion B: Investigation Patterns	
Level	Descriptor
0	I have not attempted to find any patterns.
1-2	With teacher assistance , the student chooses problem solving strategies in an attempt to identify rules.
3-4	The student chooses problem solving strategies in an attempt to identify rules.
5-6	The student chooses appropriate problem solving strategies to identify rules.
7-8	The student chooses appropriate problem solving strategies to identify rules and provide reasoning .

Let's make up a new operation and denote it by \oplus , so that $a \oplus b$ means b^a .

$$2 \oplus 3 = 3^2 = 9$$

$$(1 \oplus 2) \oplus 3 = 2^1 \oplus 3 = 3^2 = 9$$

1. What number is represented by $2 \oplus 3$?
2. What number is represented by $3 \oplus 2$?
3. Does the operation \oplus appear to be commutative?
4. What number is represented by $(2 \oplus 1) \oplus 3$?
5. What number is represented by $2 \oplus (1 \oplus 3)$?
6. Does the operation \oplus appear to be associative?

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____