Generate and Compare Numerical Patterns

In this worksheet, we will practice generating two numerical sequences and comparing them. For this worksheet, we will always start with zero for addition, and one for multiplication. For example,

Given the rule +4, generate a 5 term sequence: 0, 4, 8, 12, 16
Given the rule +2, generate a 5 term sequence: 0, 2, 4, 6, 8

The terms in the +4 sequence are (circle one) half of  double  triple the terms in the +2 sequence.

Exercise Questions:

1. Generate a 5 term sequence, with the rule +2 ______________________
   Generate a 5 term sequence, with the rule +4 ______________________

   The terms in the +2 sequence are (circle one) half double triple the terms in the +4 sequence.

2. Generate a 4 term sequence, with the rule +6 ______________________
   Generate a 4 term sequence, with the rule +2 ______________________

   The terms in the +6 sequence are (circle one) half double triple the terms in the +2 sequence.

3. Generate a 6 term sequence, with the rule x2 ______________________
   Generate a 6 term sequence, with the rule x4 ______________________

4. Finish the sequences and write the rules:
   0, 2, 4, ___, ___, ___  Rule: _____
   0, 4, 8, ___, ___, ___  Rule: _____

5. Finish the sequences and write the rules:
   1, 2, 4, 8, 16, ___, ___  Rule:_____
   1, 3, 9, 27, 81, ___, ___  Rule: _____
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**Answer Key**

1. Generate a 5 term sequence, with the rule +2 ___0, 2, 4, 6, 8____
   Generate a 5 term sequence, with the rule +4 ___0, 4, 8, 12, 16____
   The terms in the +2 sequence are (half of) double triple the terms in the +4 sequence.

2. Generate a 4 term sequence, with the rule +6 ___0, 6, 12, 18,____
   Generate a 4 term sequence, with the rule +2 ___0, 2, 4, 6____
   The terms in the +6 sequence are (1/3 of) half of triple the terms in the +2 sequence.

3. Generate a 6 term sequence, with the rule x2 ___1, 2, 4, 8, 16, 32____
   Generate a 6 term sequence, with the rule x4 ___1, 4, 16, 64, 256, 1024____

4. Finish the sequences and write the rules:
   0, 2, 4, 6, 8, 10 Rule: +2
   0, 4, 8, 12, 16, 20 Rule: +4

5. Finish the sequences and write the rules:
   1, 2, 4, 8, 16, 32, 64 Rule: x2
   1, 3, 9, 27, 81, 243, 729 Rule: x3