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**Station 1 – General Sequences**

1. What is the definition of a sequence?

**A sequence is an ordered list of terms that follow a pattern.**

1. Is the sequence defined by  explicit or recursive? How do you know? List the first four terms of the sequence.

**The formula is explicit because the variable is “n” not “tn-1.”**

**   **

1. Is the sequence defined by  explicit or recursive? How do you know? List the first four terms of the sequence.

**The formula is recursive because the variable is “tn-1” and not “n”.**

**t1 = 15, t2 = 25, t3 = 45, t4 = 85**

1. What does  represent in a sequence?

** represents the value of the previous term**

1. List the next 3 terms in the sequence: 3, 6, 11, 18, 27, **\_\_40\_\_\_, \_\_55\_\_\_, \_\_72\_\_\_**
2. List the next 3 terms in the sequence: 75, 72, 69, 66, \_\_**63\_\_, \_\_\_60\_\_\_, \_\_57\_\_\_\_**

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**Station 2 – General Series**

1. What is the definition of a series?

**A series is the sum of the terms of a sequence**

1. What does the symbol  mean? What is the name of the symbol?

** means you should add up the terms of the series. The symbols name is “sigma.”**

1. Evaluate the following:
   1.  t1 = 3, t4 = 48,

soo.. S4 = (4/2)(3+48) = **104**

* 1.  t1 = 5, t5 = 45,

soo.. S5 = (5/2)(5+45) = **125**

* 1.  t1 = 3, t7 = 15,

soo.. S7 = (7/2)(3+15) = **63**

1. Write the following using series notation: 2+4+6+8+…+30

 or 

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**Station 3 – Arithmetic Sequences – Part 1**

1. What is the definition of an arithmetic sequence?

**An arithmetic sequence is a sequence (an ordered list of terms) that has a common difference (d) between each term. (Aka- the difference between each term is the same by addition or subtraction).**

1. What does the letter d represent in the formula for an arithmetic sequence?

**d = the “common difference” between each term**

1. What is the explicit formula of an arithmetic sequence?

**tn= t1 + d(n-1)**

1. Determine if the following sequences are arithmetic. If so, give the value of d.
   1. 2, 4, 8, 16, 32, …
   2. 4, 4.5, 5, 5.5, … **yes. d = .5**
   3. 81, 79.5, 78, 76.5, … **yes. d = -1.5**
2. List the first four terms of the sequence: 

**t1 = 33, t2 = 36, t3 = 39, t4 = 42**

1. Find the 35th term of the sequence: 

**T35 = -165**

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**Station 4 – Arithmetic Sequences -Part 2**

1. Write an explicit formula for the following sequences:
   1. 6, 8, 10, 12, 14…. **tn = 6 + 2(n-1)**
   2. -50, -45, -40, -35, … **tn = -50 + 5(n-1)**
2. Given that  and , find the value of the common difference.



1. Given that  and , find the value of .

**t1=2**

1. Use your answers from problems 2 and 3 to write an explicit formula for an arithmetic sequence with  and 

**tn = 2 + 4(n-1)**

1. Write an explicit formula for an arithmetic sequence with  and 





