Warm-up 1/8

1. Write down one fun thing that you did over break.

2. Write down something that you are going to work toward this quarter in math.

Complete the sequences.

3. 21, 23, 25, ___, ___, ___, ...   4. 2, 4, 8, 16, ___, ___, ___, ...

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1. Write down one fun thing that you did over break.

2. Write down something that you are going to work toward this quarter in math.

Complete the sequences.

3. 21, 23, 25, <u>27 29 31</u>, ...   4. 2, 4, 8, 16, <u>32, 64, 128</u>...

+2   x2

Midterm check

	Proficient with Distinction 4	Proficient 3	Nearly Proficient 2	Substantially Below Proficient 1
Understands the Problem	Student explains the meaning of the problem, analyzes givens and goal(s), and chooses an <u>efficient</u> and mathematically sound solution pathway. <u>They take constraints and relationships into consideration.</u>	Student explains the meaning of the problem, analyzes givens and goal(s), and plans a mathematically sound solution pathway.	**Students struggles** to explain the meaning of the problem, analyze givens and goal(s), and plan a mathematically sound solution pathway.	**Student fails to explain** the meaning of the problem, analyze givens and goals, and plan a mathematically sound solution pathway.
Implements a Solution Strategy	Student implements an appropriate solution strategy <u>which includes **at least three** of the following:</u> considering analogous problems, solving a simpler form of the original problem, searching for regularity or trends, making a table, drawing a diagram, creating a graph, OR any other applicable strategy.	Student implements an appropriate solution strategy <u>which includes **at least two** of the following:</u> considering analogous problems, solving a simpler form of the original problem, searching for regularity or trends, making a table, drawing a diagram, creating a graph OR any other applicable strategy.	Student implements an appropriate solution strategy <u>which includes **at least one** of the following:</u> considering analogous problems, solving a simpler form of the original problem, searching for regularity or trends, making a table, drawing a diagram, creating a graph OR any other applicable strategy.	**Student fails to** implement an appropriate solution strategy which includes at least one of the following: considering analogous problems, solving a simpler form of the original problem, searching for regularity or trends, making a table, drawing a diagram, creating a graph OR any other applicable strategy.
Evaluates Reasonableness	The student articulates whether or not their resulting solution "makes sense" when relating back to the original problem and/or question. <u>Student checks their answers using a different method.</u>	The student articulates whether or not their resulting solution "makes sense" when relating back to the original problem and/or question.	Student is <u>unsure</u> of whether or not their solution strategy "makes sense" when relating back to the original problem/question.	Student does not attempt to "make sense" of the original problem/question.

Desmos Activity!

An **arithmetic sequence** has a constant difference between each term. (Linear Function)

For example: 2, 4, 6, 8,10,12,…

We can see clearly that all the terms differ by +2.

We call this the common difference, d.

A **geometric sequence** has a constant ratio (multiplier) between each term. (Exponential Function)

An example is: 2, 4, 8, 16, 32,…

So to find the next term in the sequence we would multiply the previous term by 2.

This is called the common ratio, r.

Homework

Worksheet

Kuta Software - Infinite Algebra 2   Name_____

Comparing Arithmetic and Geometric Sequences   Date_____ Period____

For each sequence, state if it is arithmetic, geometric, or neither.

1) 1, 3, 6, 10, 15, ...

2) 40, 43, 46, 49, 52, ...

3) $4, \dfrac{13}{3}, \dfrac{14}{3}, 5, \dfrac{16}{3}, ...$

4) −4, 12, −36, 108, −324, ...

5) 4, 16, 36, 64, 100, ...

6) −29, −34, −39, −44, −49, ...

9) −34, −26, −18, −10, −2, ...

10) 0, 3, 8, 15, 24, ...

11) $a_n = -163 + 200n$

12) $a_n = 16 + 3n$

13) $a_n = -4 \cdot (-3)^{n-1}$

14) $a_n = -\dfrac{3}{4} + \dfrac{3}{2}n$

Kuta Software - Infinite Algebra 2   Name_____

Comparing Arithmetic and Geometric Sequences   Date_____ Period____

For each sequence, state if it is arithmetic, geometric, or neither.

1) 1, 3, 6, 10, 15, ...

   Neither

2) 40, 43, 46, 49, 52, ...

   Arithmetic

3) 4, $\dfrac{13}{3}$, $\dfrac{14}{3}$, 5, $\dfrac{16}{3}$, ...

   Arithmetic

4) −4, 12, −36, 108, −324, ...

   Geometric

5) 4, 16, 36, 64, 100, ...

   Neither

6) −29, −34, −39, −44, −49, ...

   Arithmetic

7) 1, 5, 25, 125, 625, ...

   Geometric

8) 1, 4, 9, 16, 25, ...

   Neither

9) −34, −26, −18, −10, −2, ...

   Arithmetic

10) 0, 3, 8, 15, 24, ...

   Neither

11) $a_n = -163 + 200n$

   Arithmetic

12) $a_n = 16 + 3n$

   Arithmetic

13) $a_n = -4 \cdot (-3)^{n-1}$

   Geometric

14) $a_n = -\dfrac{3}{4} + \dfrac{3}{2}n$

   Arithmetic