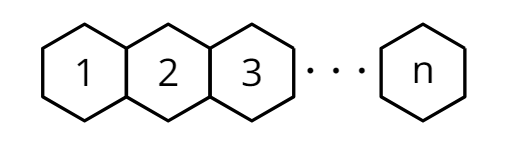
### Lesson 9 Practice Problems

1. A party will have hexagonal tables placed together with space for one person on each open side:

* 
  1. Complete this table showing the number of people who can sit at tables.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | * + 1 | * + 2 | * + 3 | * + 4 | * + 5 |
|  | * + 6 |  |  |  |  |

* 1. Describe how the number of people who can sit at the tables changes with each step.
  2. Explain why does not make sense in this scenario.
  3. Define recursively and for the term.

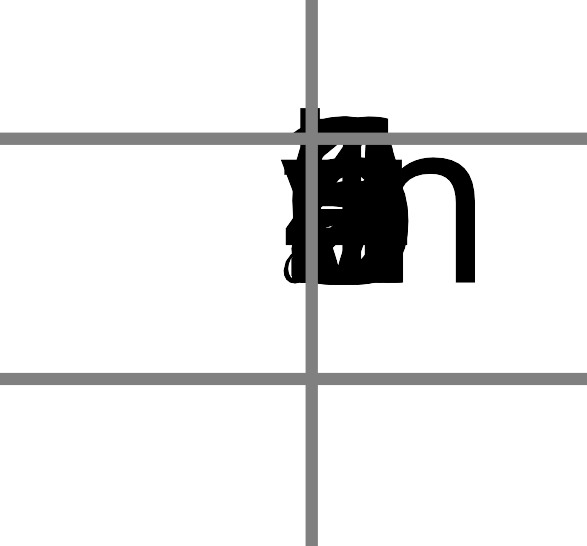
1. Diego is making a stack of pennies. He starts with 5 and then adds them 1 at at time. A penny is 1.52 mm thick.
   1. Complete the table with the height of the stack , in mm, after pennies have been added.
   2. Does make sense? Explain how you know.

|  |  |
| --- | --- |
|  |  |
| * 0 |  |
| * 1 |  |
| * 2 |  |
| * 3 |  |

1. A piece of paper has an area of 80 square inches. A person cuts off of the piece of paper. Then a second person cuts off of the remaining paper. A third person cuts off what is left, and so on.
   1. Complete the table where is the area, in square inches, of the remaining paper after the person cuts off their fraction.
   2. Define for the term.
   3. What is a reasonable domain for the function ? Explain how you know.

|  |  |
| --- | --- |
|  |  |
| * 0 | * 80 |
| * 1 |  |
| * 2 |  |
| * 3 |  |

1. Here is the recursive definition of a sequence: for .
   1. List the first 5 terms of the sequence.
   2. Graph the value of each term as a function of the term number.

* 
* (From Unit 1, Lesson 7.)

1. Here is a graph of sequence . Define recursively using function notation.

* 
* (From Unit 1, Lesson 6.)

1. Here is a recursive definition for a sequence :  for . The definition for the term is  for .
   1. Explain how you know that these definitions represent the same sequence.
   2. Select a definition to calculate , and explain why you chose it.

* (From Unit 1, Lesson 8.)

1. An arithmetic sequence starts 20, 16, . . . Explain how you would calculate the value of the 500th term.

* (From Unit 1, Lesson 8.)



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