## Unit 1 Lesson 3: Different Types of Sequences

### 1 Remembering Function Notation (Warm up)

#### Student Task Statement

Consider the function $f$ given by $f\left(n\right)=3n−7$. This function takes an input, multiplies it by 3, then subtracts 7.

Evaluate mentally.

* $f\left(10\right)$
* $f\left(10\right)−1$
* $f\left(10−1\right)$
* $f\left(5\right)−f\left(4\right)$

### 2 Three Sequences

#### Student Task Statement

Here are the values of the first 5 terms of 3 sequences:

* $A$: 30, 40, 50, 60, 70, . . .
* $B$: 0, 5, 15, 30, 50, . . .
* $C$: 1, 2, 4, 8, 16, . . .
1. For each sequence, describe a way to produce a new term from the previous term.
2. If the patterns you described continue, which sequence has the second greatest value for the 10th term?
3. Which of these could be geometric sequences? Explain how you know.

### 3 Representing a Sequence

#### Student Task Statement

Jada and Mai are trying to decide what type of sequence this could be:

| term number | value |
| --- | --- |
| 1 | 2 |
| 2 | 6 |
| 5 | 18 |

Jada says: “I think this sequence is geometric because in the value column each row is 3 times the previous row.”

Mai says: “I don’t think it is geometric. I graphed it and it doesn’t look geometric.”

Do you agree with Jada or Mai? Explain or show your reasoning.



© CC BY 2019 by Illustrative Mathematics®