

1.2 Technology: TI-83 Plus Calculator: Generating the Terms of a Sequence

Specific Expectations

The following expectation is common to the Functions and Relations course and the Functions course.

- FA1.01(U) write terms of a sequence, given the formula for the n th term or given a recursion formula

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Time Required Functions and Relations or Functions: 40 min

Materials and Equipment

- TI-83 Plus calculator. A view screen will be helpful for visual learners.

Overview

- Use the sequence function in the List OPS menu of the TI-83 Plus to quickly generate a specific number of terms for a sequence given the general term.
- Input the initial and final position numbers of the sequence and then generate the terms in that range.

Generating Sequences

The advantage of using this technology is that the student can focus on the patterns or relationships between terms of the sequence, rather than the calculations. Entering the general term generates a specific set of terms. Students must carefully enter the general term and inserting brackets may be helpful.

Students can also use the sequence function to determine a general term if they know the terms of a sequence. For example, the sequence for (h) is 1, 4, 27, 256, ... To find the general term, a student could enter a reasonable guess, that is, X^2 , and generate the terms. The student could continue entering expressions for the general term until the generated sequence matches the given sequence.

Management Options

Partners – Allow students to follow the instructions in the text. On an overhead, show

pairs of students the general term of a sequence and ask them to find specific terms, such as the first eight terms or the fifth term. Allow a short time for calculation before showing the correct response. When students are confident in their own abilities, they should respond individually. Some students may be willing to create a reasonable question for other students.

Individual – Walk among the class offering support as necessary, while students follow the instructions in the text.

Class Discussion – The teacher or a student, who has had an opportunity to prepare ahead of time, can use a TI view screen to lead students through entering information into a calculator and provide sample questions for all students to try.

ASSESSMENT SUGGESTION

Communication

A competent student might enjoy presenting a “mini-lesson.” The instructions are straightforward and most students might self-teach this section.

TEACHER INTERVENTION

Do not assume that all students are experienced calculator users, especially if your school has a mobile student population. Pair an inexperienced student with someone who is familiar with the technology, but each student should have a calculator so the inexperienced student is working hands-on.

Questions with a Functions and Relations Focus:

(a)–(h)

Questions with a Functions Focus:

(a)–(h)