FST
Notes 4.2

Name:
Date: Block:

4.2 Arithmetic Sequences

Recall: Recursive Formula

Example. Consider the arithmetic sequence. What are the first three terms of the sequence? What is the 100th term of the sequence?

$$\begin{cases} a_1 = 3 \\ a_n = a_{n-1} + 5 \end{cases}$$

Arithmetic Sequences: Explicit Formula

Example. Give the recursive and explicit notation for the arithmetic sequence. $10, 12, 14, 16, 18, \ldots$

Recursive

Explicit

Practice. Give the recursive and explicit notation for the arithmetic sequence. $46, 40, 34, 28, 22, \ldots$

Recursive

Explicit

Consider the arithmetic sequence defined by $\begin{cases} a_1 = 12 \\ a_n = a_{n-1} + 3, n > 1 \end{cases}$

a) Is the sequence defined explicitly or recursively?

b) What does a_{n-1} mean?

c) What is the first term and common difference?

d) Write the first 4 terms of the sequence?

e) What is the 312th term of the sequence?

Example. For each of the following problems, the information about the following sequence refers to an arithmetic sequence. Write both a recursive and explicit formula for each sequence.

1) $p_3 = 106, p_4 = 89, p_5 = 72$ Recursive: Explicit:

2) $a_8 = 21 \; and \; a_{27} = 97$ Recursive: Explicit: