

JANUARY 7

What is the difference between
a derivative and an integral?

ARE YOU COMING TO
THE STUDY SESSION ON
SATURDAY??



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Students will verbally explain how to
use equations to define
sequences

(using the words:
~~trig functions, factor, inverse...~~)



Sequence	list of numbers in an explicit order $\{a_n\} = \{a_1, a_2, a_3, \dots, a_n\}$ $a_n = \text{term}$
Explicitly Defined Sequence	Defined in terms of n $a_n = \frac{n-1}{n}$ $a_1 = 0, a_2 = \frac{1}{2}$
Recursively Defined Sequence	Defined in terms of the previous term (or terms) $a_1 = 1, a_2 = 1, a_n = a_{n-1} + a_{n-2}$ $a_3 = a_2 + a_1 = 2$ $a_4 = a_3 + a_2 = 3$ $a_5 = a_4 + a_3 = 5$ } Fibonacci Sequence
Alternating Sequence	terms alternate signs $(-1)^n$

Arithmetic Sequence

Explicit: $a_n = d(n - 1) + b$

Recursive: $a_n = a_{n-1} + d$

Sequence with a common difference

$$a_n - a_{n-1} = d$$

$b = \text{starting \#}$

Geometric Sequence

Explicit: $a_n = b(r^{n-1})$

Recursive: $a_n = a_{n-1}(r)$

Sequence with a common ratio

$$\frac{a_n}{a_{n-1}} = r$$

$b = \text{start \#}$

$$\{a_n\} = 15, 13, 11, 9, \dots$$

arithmetic

$$d = -2$$

$$b = 15$$

$$\text{Explicit: } a_n = -2(n-1) + 15$$

$$\text{Recursive: } a_n = a_{n-1} - 2, a_1 = 15$$

$$\{a_n\} = 6, 12, 24, 48, \dots$$

Geometric

$$r = 2$$

$$b = 6$$

$$\text{Explicit: } a_n = 6(2)^{n-1}$$

$$\text{Recursive: } a_n = 2a_{n-1}, a_1 = 6$$

Assignment #1

Pg 546 #3-13, 15-25