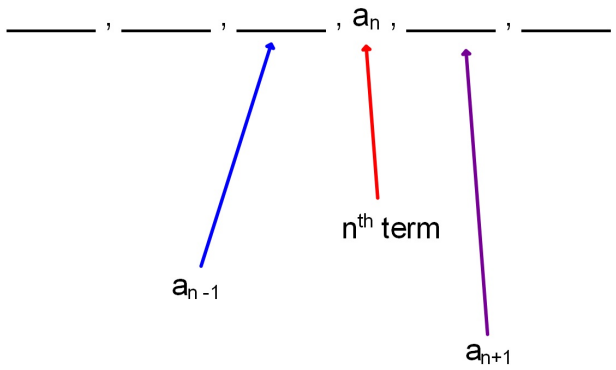


Explicit Formula:

A formula that expresses the n^{th} term using n (term number).

Example: $a_n = (n + 3)^2$

$a_{10} = 169$

Write an explicit formula for each sequence

1. 9, 10, 11, 12, ... $a_n = n + 8$

$n = 1\ 2\ 3\ 4$

2. 20, 30, 40, 50, ... $a_n = \begin{cases} 10(n+1) \\ \text{or} \\ 10n + 10 \\ \text{or} \\ 10(n-1) + 20 \end{cases}$

$n = 1\ 2\ 3\ 4$

3. $\frac{5}{3}, \frac{10}{4}, \frac{15}{5}, \frac{20}{6}, \ldots$ $a_n = \frac{5n}{n+2}$

$n = 1\ 2\ 3\ 4$

Recursive Formula: Defines the n^{th} term (a_n) using the previous term (a_{n-1})

Example: $a_1 = 16$
$a_n = a_{n-1} + 7$

16, 23, 30, 37, 44

$a_5 = 44$

Write a recursive formula for each sequence.

1. 1664, - 416, 104, -26, ...

$a_1 = 1664$

$a_n = \frac{a_{n-1}}{-4}$

2. 13.5, 16, 18.5, 21, ...

$a_1 = 13.5$

$a_n = a_{n-1} + 2.5$

Sec 11-2: Arithmetic Sequences

Created by adding the same number each time.

The difference between consecutive terms is constant.

d = Common Difference

Find the Common Difference (d) in each Arithmetic sequence.

1. 14, 22, 30, 38, ... d = 8

2. 29, 22, 15, 8, ... d = −7

$d = a_n - a_{n-1}$ = Any term - Previous term

Given the following Arithmetic Sequence

16, x , 28, ... Find the value of x

$28 - x = x - 16$

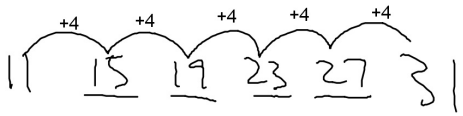
$28 + 16 = 2x$

$\frac{28+16}{2} = x$

x is called the Arithmetic Mean of 16 and 28.

Find the missing terms of this Arithmetic sequence.

34, 40 , 46 , 52 , 58



$31-11=20\div5=4$

Recursive Formula for an Arithmetic Sequence:

7, 12, 17, 22, ... Find d.

a_1 = Given First Term

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

Write a recursive formula for this sequence:

19, 11, 3, -5, ... $a_1=19$

$a_n = a_{n-1} - 8$

Explicit Formula for an Arithmetic Sequence:

5, 9, 13, 17, 21, ... Find d. $d=4$

Explicit Formula:

$a_n = a_1 + (n - 1)d$

$a_1 = 5$
$a_2 = 5 + 4$
$a_3 = 5 + 4 + 4$
$a_4 = 5 + 4 + 4 + 4$
$a_5 = 5 + 4 + 4 + 4 + 4$
.
.
.
$a_n =$

$a_n=5+(n-1)4$

Write the explicit formula for this sequence.

-34, -21, -8, 5, ...

$a_n=-34+(n-1)13$