

EQ:

Recall: Find the n^{th} term of an Arithmetic Sequence:

- Arithmetic Sequence ---
- What is the Explicit Formula for an Arithmetic Sequence?

$$a_n = \underline{\hspace{10em}} \quad * \underline{\hspace{10em}} \text{Form}$$

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Ex 1. Write the explicit formula for the sequence _____ Then find _____.

- What is the Recursive Formula for an Arithmetic Sequence? _____

Ex 2. The eighth term of an arithmetic sequence is 75, and the twentieth term is 39. Find the first term and the common difference. Give the recursive formula for this sequence.

❖ Find the _____ of an _____

- Generate Terms of an Arithmetic Sequence Two Ways:

1st way: Repeated _____ of _____ to the _____ term

$$S_n = a_1 + a_2 + a_3 + \dots + a_{n-2} + a_{n-1} + a_n$$

2nd way: Repeated _____ of _____ from the _____ term

$$S_n = a_n + a_{n-1} + a_{n-2} + \dots + a_3 + a_2 + a_1$$

RECALL: How can you solve systems of equations?

1. _____
2. _____
3. _____

Add these two versions of _____.

$$S_n = a_1 + (a_1 + d) + (a_1 + 2d) + \dots + [a_1 + (n-1)d]$$
$$+ \underline{S_n = a_n + (a_n - d) + (a_n - 2d) + \dots + [a_n - (n-1)d]}$$

RECALL: What was our GOAL?

What do we do now?

So you have _____ = _____

Ex 3. Find the sum of the _____ integers _____ to _____. $S_n =$ _____

The formula says we need to know _____, the _____ term, and the _____th term.

Since we are asked to find the sum of the first _____ terms, $n =$ _____

Find first term: $a_1 =$ _____

Find 10th term: $a_{10} =$ _____

Now find $S_{10} =$ _____

Ex. 4 Find S_{20} for the sequence _____

$S_n =$ _____ What information do you need?

$n =$ _____ Find first term: $a_1 =$ _____ Find 20th term: $a_{20} =$ _____

$S_{20} =$ _____

- Finding the _____ partial sum of an _____ arithmetic sequence --- _____ of the first _____ terms of an _____ sequence

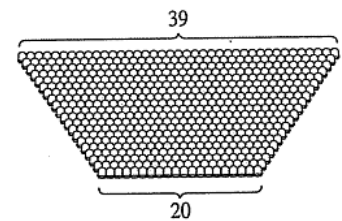
Ex 5. Find the _____ of the arithmetic sequence _____

Step 1: State _____ formula _____

Step 2: Use explicit formula to find _____ term

Step 3: Use sum formula to find partial sum.

- Ex. 6 An auditorium has 20 rows of seats. There are 20 seats in the first row, 21 seats in the second row, 22 seats in the third row, and so on. How many tickets need to be sold to sell out this auditorium for an upcoming show?



To find the sum of all 20 rows, we need: $n =$ _____ $d =$ _____ and $a_1 =$ _____

What is the explicit formula for this problem? $a_n =$ _____

Find 20th term: $a_{20} =$ _____ $S_{20} =$ _____

❖ Assignment: p. 635 ODDS #1 - 43, 59 - 71, 83 - 87