



#Goals



Mallory is training for a race. She plans to slowly increase her running during the month of July. On July 1st, she starts by running 15 minutes and then adds 5 minutes to her run every day.

1. Mallory tries to record how much she ran every day, but she notices that she forgot to track her running on several days. Complete her running log for the indicated days.

Date	Time spent running
July 1st	15 minutes
July 2nd	
July 5th	
July 16th	
July 30th	
July 31st	165 minutes

2. Write a rule that gives the amount of time that Mallory runs on the n th day in July. Show that your rule works.
3. What was Mallory's average run length during the month of July? How did you figure it out?
4. How many minutes total did Mallory run in the entire month of July? Explain your strategy.
5. Mallory's brother David also starts training on July 1st and keeps track of the number of *miles* he ran. Each day he adds 0.2 miles to his run. On July 18th he runs for 7.6 miles.
 - a. How many miles does he run on July 19th?
 - b. How many miles does he run on July 22nd?
 - c. How many miles does he run on July 15th?
 - d. Write a rule that gives the number of miles David runs on the n th day of July.
6. Can you figure out how many miles David ran on any given day without knowing how many miles he ran on July 1st? Why or why not?

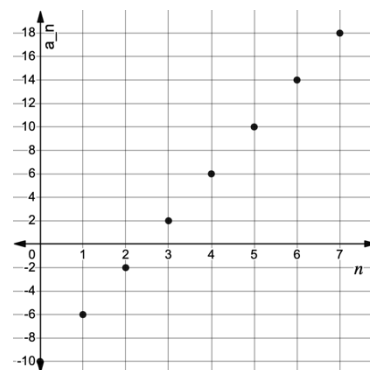
Lesson 4.1 – Change in Arithmetic Sequences

QuickNotes

Check Your Understanding

1. For an arithmetic sequence, $a_3 = -30$ and $a_6 = -6$. Find the common difference.
2. The 7th term of an arithmetic sequence is 18 and the common difference is -5. Write a rule for the n th term, a_n .

3. The graph of a sequence is shown.
 - a. Is this sequence arithmetic? Why or why not?



- b. Write an expression for a_n , the n th term in the sequence.
4. Mario sets his cruise control at 68 miles per hour. Is the function that represents his total distance driven after n hours an example of an arithmetic sequence? Why or why not?