NAME _____ DATE _____ PERIOD _____

Arithmetic Sequences as Linear Functions

Write an equation for the *n*th term of each arithmetic sequence. Then graph the first five terms of the sequence.

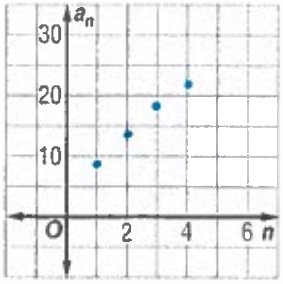
1. 9, 13, 17, 21, . . . (+4)

$a_1 = 9$, $d = 4$

$f(n) = 9 + (n-1)4$

$= 9 + 4n - 4$

$f(n) = 5 + 4n$



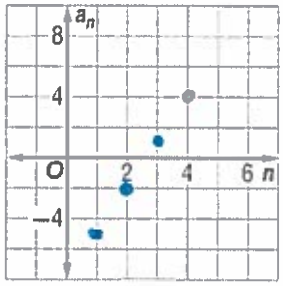
2. −5, −2, 1, 4, . . . (+3)

$a_1 = -5$, $d = 3$

$f(n) = -5 + (n-1)3$

$= -5 + 3n - 3$

$f(n) = -8 + 3n$



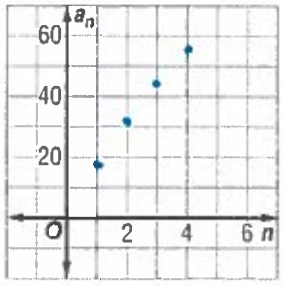
3. 19, 31, 43, 55, . . . (+12)

$a_1 = 19$, $d = 12$

$f(n) = 19 + (n-1)12$

$= 19 + 12n - 12$

$f(n) = 7 + 12n$



4. SPORTS Wanda is the manager for the soccer team. One of her duties is to hand out cups of water at practice. Each cup of water is 4 ounces. She begins practice with a 128-ounce cooler of water. How much water is remaining after she hands out the 14th cup?

$a_1 = 128$, $d = 4$, $n = 14$

$a_n = 128 + (14-1)4$

$= 128 + 13 \cdot 4$

$= 128 + 52$

$=$ 180 ounces

5. THEATER A theater has 20 seats in the first row, 22 in the second row, 24 in the third row, and so on for 25 rows. How many seats are in the last row?

20, 22, 24, . . .

$a_1 = 20$, $d = 2$, $n = 25$

$a_{25} = 20 + (25-1)2$

$= 20 + 24 \cdot 2$

$= 20 + 48 =$ 68 seats

6. BANKING Chem deposited $115.00 in a savings account. Each week thereafter, he deposits $35.00 into the account.

a. Write a function to represent the total amount Chem has deposited for any particular number of weeks after his initial deposit.

$a_1 = 115$, $d = 35$

$f(n) = 115 + (n-1)35$

$= 115 + 35n - 35$

$f(n) = 35n + 80$

b. How much has Chem deposited 30 weeks after his initial deposit?

$f(30) = 35(30) + 80$

$=$ $1130

...FLIP OVER TO THE BACK!