

**Zadatak 15.** Napiši prvih pet članova niza  $(a_n)$  ako je:

- 1)  $a_1 = 1, a_{n+1} = 2a_n - n, n \geq 1$ ;
- 2)  $a_1 = 3, a_n = n^2 + 2a_{n-1}, n \geq 2$ ;
- 3)  $a_1 = 1, a_n = a_1 + a_2 + \dots + a_{n-1}, n \geq 2$ ;
- 4)  $a_1 = a_2 = 1, a_n = a_{n-1}^2 - na_{n-2}, n \geq 3$ ;
- 5)  $a_1 = a_2 = 1, a_n = a_{n-1} + a_{n-2}, n \geq 3$ .

*Rješenje.*

- 1)  $a_1 = 1, a_{n+1} = 2a_n - n, n \geq 1$ ;  
 $a_1 = 1, a_2 = 2 \cdot 1 - 1 = 1, a_3 = 2 \cdot 1 - 2 = 0,$   
 $a_4 = 2 \cdot 0 - 3 = -3, a_5 = 2 \cdot (-3) - 4 = -10;$
- 2)  $a_1 = 3, a_n = n^2 + 2a_{n-1}, n \geq 2$ ;  
 $a_1 = 3, a_2 = 4 + 2 \cdot 3 = 10, a_3 = 9 + 2 \cdot 10 = 29,$   
 $a_4 = 16 + 2 \cdot 29 = 74, a_5 = 25 + 2 \cdot 74 = 173;$
- 3)  $a_1 = 1, a_n = a_1 + a_2 + \dots + a_{n-1}, n \geq 2$ ;  
 $a_1 = 1, a_2 = 1, a_3 = 1 + 1 = 2,$   
 $a_4 = 1 + 1 + 2 = 4, a_5 = 1 + 1 + 2 + 4 = 8;$
- 4)  $a_1 = a_2 = 1, a_n = a_{n-1}^2 - na_{n-2}, n \geq 3$ ;  
 $a_1 = 1, a_2 = 1, a_3 = 1^2 - 3 \cdot 1 = -2,$   
 $a_4 = (-2)^2 - 4 \cdot 1 = 0, a_5 = 0^2 - 5 \cdot (-2) = 10;$
- 5)  $a_1 = a_2 = 1, a_n = a_{n-1} + a_{n-2}, n \geq 3$   
 $a_1 = 1, a_2 = 1, a_3 = 1 + 1 = 2,$   
 $a_4 = 2 + 1 = 3, a_5 = 3 + 2 = 5$