

Oefeningen Rijen ANTWOORDEN

1. $u(n) = 7\frac{1}{2} + 2\frac{1}{2}.n$ met $u(0) = 7\frac{1}{2}$ en $u(19) = 7\frac{1}{2}$

$$t_1 + t_2 + t_3 + t_4 \dots t_{20} = u(0) + u(1) + \dots + u(19) = \frac{1}{2} \cdot 20 \cdot (7\frac{1}{2} + 55) = 625$$

2. $U(n) = 3 \cdot u(n-1)$ en $u(0) = 1$

$$u(n) = 1 * 3^n \text{ en dus } u(15) = 1 * 3^{15} = 14348907$$

3. $25 + 21 + 17 + 13 + \dots + 95 =$

$$u(n) = 25 - 4.n = -95 \Rightarrow n = 30 \text{ dus } som = \frac{1}{2} \cdot 31 \cdot (25 + -95) = -1085$$

4. Gegeven: $u(n) = 1,4 \cdot 0,98^{n-1}$, noteer de recursie-formules

$$u(n) = 0,98 \cdot u(n-1) \text{ en } u(1) = 1,4$$

5. $1,1 + 2,2 + 3,3 + 4,4 + \dots + 24,2 =$

$$u(n) = 1,1.n = 24,2 \Rightarrow n = 22 \text{ dus } som = \frac{1}{2} \cdot 22 \cdot (1,1 + 24,2) = 278,3$$

6. Gegeven de rij R: 10, 8, 6, 4, 2,

$$u(n) = u(n-1) - 2 \text{ en } u(1) = 10$$

$$u(n) = -2.n + 10 \text{ met } u(0) = 10$$

$$u(19) = -2 \cdot 19 + 10 = -28 \text{ dus } som = \frac{1}{2} \cdot 20 \cdot (10 + -28) = -180$$

7. Gegeven: $u(n+1)=u(n)+2 \cdot u(n-1)$ en $u(1)=2$ en $u(2)=3$

Rij: 2, 3, 7, 13, 27, 53, 107, 213, dus 213

$$8. \sum_{n=2}^{18} (3n-1) = 5 + 8 + 11 + \dots + 53 = \frac{1}{2} \cdot 17 \cdot (5 + 53) = 493$$

$$9. \sum_{k=7}^{20} (1,25)^k = 1,25^7 \cdot \frac{1,25^{15} - 1}{1,25 - 1} = 523,0276$$

$$10. \sum_{n=1}^{10} (0,35)^n = 0,35 \cdot \frac{0,35^{10} - 1}{0,35 - 1} = 0,538456$$

$$11. \sum_{k=3}^{20} (5-2k) = -1 + -3 + -5 + \dots + -35 = \frac{1}{2} \cdot 18 \cdot (-1 + -35) = -324$$

$$12. \sum_{n=1}^{10} (3 \cdot 5^n + 8) = \sum_{n=1}^{10} (3 \cdot 5^n) + 80 = 3 \cdot \frac{5^{10} - 1}{5 - 1} + 80 = 7324298$$