

Zadatak 6. Niz (a_n) je aritmetički niz.

- 1) Ako je $a_6 = 16$, $a_8 = 22$, odredi a_{10} .
- 2) Ako je $a_{11} = 18$, $a_{13} = 8$, odredi a_9 .
- 3) Ako je $a_7 = -5$, $a_{32} = 70$, koliki je a_{11} ?
- 4) Ako je $a_5 = 2$, $a_{40} = 142$, koliki je a_{13} ?
- 5) Ako je $a_4 = 1$, $a_{332} = 2$, odredi a_{168} .

Rješenje.

Za računanje koristit ćemo formule:

$$d = \frac{a_n - a_m}{n - m}, \quad n > m \quad a_m = a_k + (m - k)d$$

1) $a_6 = 16$, $a_8 = 22$, $a_{10} = ?$

$$d = \frac{a_8 - a_6}{8 - 6} = \frac{22 - 16}{2} = \frac{6}{2} = 3$$

$$a_{10} = a_8 + 2d = 22 + 2 \cdot 3 = 22 + 6 = 28;$$

2) $a_{11} = 18$, $a_{13} = 8$, $a_9 = ?$

$$d = \frac{a_{13} - a_{11}}{13 - 11} = \frac{8 - 18}{2} = \frac{-10}{2} = -5$$

$$a_9 = a_{11} - 2d = 18 - 2 \cdot (-5) = 18 + 10 = 28$$

3) $a_7 = -5$, $a_{32} = 70$, $a_{11} = ?$

$$d = \frac{a_{32} - a_7}{32 - 7} = \frac{70 + 5}{25} = \frac{75}{25} = 3$$

$$a_{11} = a_7 + 4d = -5 + 4 \cdot 3 = -5 + 12 = 7;$$

4) $a_5 = 2$, $a_{40} = 142$, $a_{13} = ?$

$$d = \frac{a_{40} - a_5}{40 - 5} = \frac{142 - 2}{35} = \frac{140}{35} = 4$$

$$a_{13} = a_5 + 8d = 2 + 8 \cdot 4 = 2 + 32 = 34;$$

5) $a_4 = 1$, $a_{332} = 2$, $a_{168} = ?$

$$d = \frac{a_{332} - a_4}{332 - 4} = \frac{2 - 1}{328} = \frac{1}{328}$$

$$a_{168} = a_4 + 164d = 1 + \frac{164}{328} = 1 + \frac{1}{2} = \frac{3}{2}.$$