

1- $t_n = 5, 9, 13, 17, \dots$ $d = 4$ $t_n = t_1 + (n-1)d$

$t_1 = 5$ $d = 4$ $t_n = 4n + 1$ $t_{10} = 4(10) + 1 = 41$ جمع جبردی

2- $t_n = 5, 10, 15, 20, \dots$ $d = 5$

$t_n = 5 + (n-1) \times 5 = 5 + 5n - 5 = 5n$ $s_n = \frac{n}{2} (t_1 + t_n)$

$s_n = \frac{n}{2} [2t_1 + (n-1)d]$ $n = 10$ $s_{10} = \frac{10}{2} [2(5) + (10-1)5]$

$s_{10} = 5 [10 + 45] = 5 \times 55 = 275$ جمع جبردی

$t_n = 5(n) + 0 = 5n$ $t_8 = 5(8) = 40$ $t_9 = 5(9) = 45$ $t_{10} = 5(10) = 50$

$t_{11} = 5(11) = 55$ $40 + 45 + 50 + 55 = 190$ جمع جبردی

3- $t_1 - t_1 = 2 - (1 + \sqrt{3})$ $2 - 1 - \sqrt{3} = 1 - \sqrt{3}$

$t_2 - t_2 = (2 - \sqrt{3}) - 2 = -1 - \sqrt{3}$ $d = 1 - \sqrt{3}$ $t_{20} - t_{19} = 2$

$t_{20} - t_{19} = 2 \times (1 - \sqrt{3})$ $t_n = (1 + \sqrt{3}) + (n-1)(1 - \sqrt{3})$

$t_{19} = (1 + \sqrt{3}) + 18(1 - \sqrt{3}) = 1 + \sqrt{3} + 18 - 18\sqrt{3} = 19 - 17\sqrt{3}$

$t_{20} = (1 + \sqrt{3}) + 19(1 - \sqrt{3}) = 1 + \sqrt{3} + 19 - 19\sqrt{3} = 20 - 18\sqrt{3}$

$t_{20} - t_{19} = (20 - 18\sqrt{3}) - (19 - 17\sqrt{3}) = 1 - \sqrt{3}$

4- $b_1 - b_1 = b_2 - b_2$ $2 - x = y - 2$ $x + y = 4$

$a_1 = 2^x$ $a_2 = 3^x$ $a_3 = 5^x$ $a_4 = 7^x$ $a_5 = 11^x$

$a_2 - a_1 = a_3 - a_2$ $3^x - 2^x = 5^x - 3^x$ $2 \times 3^x = 5^x$

$1 + 2x = y$ $x + (2x + 1) = 4$ $3x = 3$ $x = 1$

$y = 2(1) + 1 = 3$ $x \cdot y = 1 \times 3 = 3$

$d = t_2 - t_1 = t_3 - t_2$ $d = (2x - 1) - (2x - 5) = 2x - 1 - 2x + 5 = 4$

$d = 5x - (2x - 1) = 5x - 2x + 1 = 3x + 1$ $4 = 3x + 1$ $3 = 3x$ $x = 1$

$t_1 = 2(1) - 1 = 1 - 1 = 0$ $t_2 = 2(2) - 1 = 4 - 1 = 3$ $t_3 = 2(3) - 1 = 6 - 1 = 5$

$t_4 = 2(4) - 1 = 8 - 1 = 7$ جمع جبردی

$a_n = \frac{3}{4}(n-1)d + a_1 = 2n+1$ $b_1 = 2$ $d = 5 - 2 = 3$ -5
 $b_n = 2 + (n-1)d = 2n-1$ $a_1 = b_1$ $2(4) = 3n - 1$
 $\frac{3n-2}{4}$ $3n-2 =$ میشود $n=2$ $c = \frac{5-2}{3} = 1$ $a_1 = d = 1$
 $n=4 \Rightarrow a_1 = \frac{12-2}{4} = 3 \rightarrow a_3 = 11$ b_4
 $n=5 \Rightarrow a_1 = \frac{15-2}{4} = 3 \rightarrow a_1 = 17$ b_5
 $n=6 \Rightarrow a_1 = 1$ b_6
 $n=7 \Rightarrow a_1 = 16$ b_7
 $n=8 \Rightarrow a_1 = 1$ b_8
 $n=9 \Rightarrow a_1 = 14$ b_9

} 7 جایی هستند
 • طرد
 11, 17, 23, 29, 35, 41

$a_n = a_1 + (n-1)d$ $a_1 + (a_1 + d) + (a_1 + 2d) = 21$ -V
 $a_1 + (a_1 + 2d) + (a_1 + 3d) = 16$
 $a_1 + 2d = 20$ $a_1 + d = 17$ $(a_1 + 2d) - (a_1 + d) = 20 - 17 = 3 = d$
 $a_1 + d = 17 \Rightarrow a_1 = 17 - 2 = 15$ $a_1 + a_2 + a_3 = 20 + 17 + 15 = 52$
 $c \cdot d = 17$ برابر 17
 $a_1 = -21$

$a_n = a_1 + (n-1)d$ $a_1 + a_2 + a_3 = 16$ $a_1 + (a_1 + d) + (a_1 + 2d) = 16$
 $a_1 + a_3 = 16$ $(a_1 + 2d) + (a_1 + d) = 16$ $2a_1 + 3d = 16$
 $a_1 = 16 - 2d$ $2(16 - 2d) + 3d = 16$ $32 - 4d + 3d = 16$ $-d = -16$ $d = 16$
 $a_{10} = a_1 + 9d = 16 + 9(16) = 16 + 144 = 160$ $a_{10} = 160$

$s_n = \frac{n}{2} [2a_1 + (n-1)d]$ $s_2 = \frac{2}{2} [2a_1 + d] = 2(a_1 + d)$ -9
 $\frac{9}{2} (2a_1 + d) = 9 [a_1 + \frac{d}{2}]$ $\frac{1}{2} (2a_1 + d) = a_1 + \frac{d}{2}$
 $2a_1 + d = 2a_1 + d$ $2a_1 + d = 2a_1 + d$
 $d = 2a_1 - 1$ $a_n = a_1 + (n-1)d$ $a_{16} = a_1 + 15d = a_1 + 15(2a_1 - 1)$
 $= a_1 + 30a_1 - 15 = 31a_1 - 15$ $a_{16} = 31a_1 - 15$
 $\frac{31a_1 - 15}{16} = 3$

$a_1 = 11$ $a_{16} = 30$ $30 = 11 + 15d \Rightarrow 19 = 15d \Rightarrow d = \frac{19}{15}$ -1
 $a_5 = 11 + 4d = 11 + 4(\frac{19}{15}) = 11 + \frac{76}{15} = \frac{236}{15}$ $a_5 = 15 + 4d = 15 + \frac{76}{15} = \frac{299}{15}$
 $d_n = 15 + (n-1)(\frac{19}{15}) = 15 + \frac{19(n-1)}{15}$ $n-1 = 5-1 = 4$ $d = -5$
 ← واسطه میانی