

$a_1 = 40$      $a_4 = 41$      $a_4 - a_1 = 3d = 41 - 40 = 1 \Rightarrow d = V$

$(n-1)V + 40 = 20 \cdot 1 \Rightarrow 1Vd = Vn$      $n = 20$   
 $Vn + 3d = 20 \cdot 1$

اولین     $a_1 + 3d = 101$      $V \times 14 + 3 = 99V$      $99V - 101 = 119$   
 $\downarrow$      $99V - 101$      $\downarrow$      $99V - 101$   
 آخری     $V$      $119$      $V$

$a_{n+1} + a_{n+2} + a_{n+3} = -4n + 11$   
 $\Rightarrow 3a_{n+2} = -4n + 11 \Rightarrow a_{n+2} = -\frac{4}{3}n + \frac{11}{3}$   
 $a_{14} = a_{12+2} = -\frac{4}{3}(12) + \frac{11}{3} = -17$      $-17 + (-1) = -18$   
 $a_1 = a_{4+2} = -\frac{4}{3}(4) + \frac{11}{3} = -1$

$a_p = 2^p - 1$      $a_1 = 2^1 + 1$      $a_{1+p} = 2^{1+p} - 1$   
 $a_p + a_{1+p} = 2^1 a_1 \Rightarrow 2^p - 1 + 2^{1+p} - 1 = 2^{p+1}$   
 $a_p + a_{1+p} + a_1 = 2^p a_1 \Rightarrow 2^p - 1 + 2^{1+p} - 1 + 2^1 + 1 = 2^p (2^1 + 1)$   
 $\Rightarrow 2^p = 2^p$      $\Rightarrow n = p$

$a_{1+p} - a_{10} = 2d = 2 \Rightarrow d = 1/2$   
 $a_{1+p} + a_{10} = 20 + 10d = 25$   
 $20 + 5d = 25 \Rightarrow d = 1$   
 $a_{11} = 20(1) - 1 = 19$

$$a_1 + a_p + a_p + a_p + a_p = a_1 + 10d$$

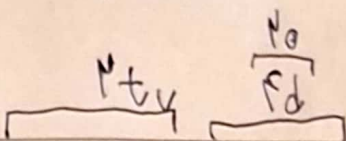
$$a_1 + a_1 + a_1 + a_1 + a_1 = a_1 + 10d$$

$$\Rightarrow \frac{a_1}{a_1} = \frac{a_1 + d}{a_1} = \frac{a_1 + 10a_1}{a_1} = 11$$

$$11(a_1 + 10d) = a_1 + 110d$$

$$11a_1 + 110d = a_1 + 110d$$

$$10a_1 = 10d \Rightarrow 11a_1 = 11d$$



$$t_n = t_{n-1} + 10$$

$$\Rightarrow t_n - t_{n-1} = 10d = 10 \Rightarrow d = 1$$

$$\frac{(t_1 + t_n)(t_n - t_1)}{t_n} = 10$$

⊗

✓

$$d = \frac{11\sqrt{11} - 11(1 - 4\sqrt{11})}{11 + 1} = \frac{11\sqrt{11}}{11} = \sqrt{11}$$

$$d = \frac{b - a}{k + 1}$$

✓

$$\frac{11n - 11}{11n + 11} = d$$

$$\Rightarrow 11 = \frac{11nd - 11d}{11n + 11}$$

$$\Rightarrow 11d = 11$$

$$\Rightarrow d = 1$$

$$11n + 11 = 11 + 11d = 11 \Rightarrow nd = 1$$

$$nd = 1 \Rightarrow n = 11$$

⊗  $a_{n+1}$

✓

$$a_{11} + a_{11} = a_n + a_{n+1}$$

$$\Rightarrow 11n + 11 = 11 \Rightarrow n = 1$$

$$a_1 + n - 1(d) = 0$$

$$a_n = 11a_1$$

$$\Rightarrow -d + (n - 1)d = 0$$

$$a_1 + 11d = 11a_1 + 11d$$

$$\Rightarrow d = (n - 1)d$$

$$11d = 11a_1$$

$$a_1 = -d$$

$$\Rightarrow n - 1 = 1$$

$$\Rightarrow n = 2$$

1.