

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۱۰۰ کلاس: A

$$a_1 = 4, a_2 = 21 \Rightarrow d = \frac{a_m - a_n}{m - n} = \frac{21 - 4}{2 - 1} = 17$$

$$V + 0 = 4 \Rightarrow 0 = 2r \Rightarrow tr = Vn + 2 \Rightarrow Vn + 2 = 2 \cdot 1 \Rightarrow Vn = 17 \Rightarrow n = 20 \checkmark$$

$$\begin{aligned} 10, 17, 24 & \quad Vn + 2 \Rightarrow \\ \begin{array}{r} 10 \\ + 17 \\ \hline 27 \end{array} & \quad \begin{array}{r} 17 \\ + 24 \\ \hline 41 \end{array} \\ \Rightarrow \text{مجموعه} &= \frac{27 \cdot 2 - 10 \cdot 1}{2} + 1 = 129 \checkmark \end{aligned}$$

$$\begin{aligned} a_3 = 2^3 - 1 / a_1 = 2^{n+1} / a_{12} = 2^{12} - 2 \Rightarrow a_1 &= \frac{a_2 + a_{12}}{2} \Rightarrow \frac{(2^3 - 1) + (2^{12} - 2)}{2} \\ &= 2^{n+1} \Rightarrow y = 2^x + 1 - 2 \Rightarrow (2 \times 2^x) - 2^x - 2^x + 2 = 0 \Rightarrow 2 \times 2^x - 2^x + 2 = 0 \Rightarrow \\ &2^x = 2 \Rightarrow x = 1 \Rightarrow a_1 = 2^1 - 1 = 1 \checkmark \end{aligned}$$

$$\begin{aligned} a_{n+1} = a + nd / a_{n+1} = a + (n+1)d / a_{n+2} = a + (n+2)d \Rightarrow (a + nd) + (a + (n+1)d) + (a + (n+2)d) &= 3a + (3n+3)d = \\ 3a + 3(n+1)d = -5n + 12 \Rightarrow a + (n+1)d &= -2n + 4 \text{ / if } n=1 \rightarrow a + 2d = -2(1) + 4 = 2 \text{ / if } n=2 \\ \rightarrow a + 3d = -2(2) + 4 = 0 \Rightarrow \begin{cases} a + 2d = 2 \\ a + 3d = 0 \end{cases} \Rightarrow d = -2 \Rightarrow a + 2(-2) = 2 \Rightarrow a - 4 = 2 \Rightarrow a = 6 \\ a_{17} = a + 16d = 6 + 16(-2) = 6 - 32 = -26 \\ a_{18} = a + 17d = 6 + 17(-2) = 6 - 34 = -28 \end{aligned} \Rightarrow a_{17} + a_{18} = -26 + (-28) = -54 \checkmark$$

$$\begin{aligned} a_{12} - a_1 = 5 &= (a_{12} + 11d) - (a_1 + 0d) = 11d \Rightarrow d = 5/11 \\ a_{12} + 11d = 5 \Rightarrow a_1 + 11(5/11) &= 5 \Rightarrow a_1 + 5 = 5 \Rightarrow a_1 = 0 \\ a_{21} = a_1 + 20d &= 0 + 20(5/11) = 100/11 \checkmark \end{aligned}$$

$$a_1 = a/a_r = a+d/a_r = a+rd/a_r = a+rd/a_r = a+rd/a_r \rightarrow S_1 = a+1 \cdot d$$

$$a_2 = a+ad/a_r = a+rd/a_r = a+rd/a_r = a+rd/a_r \rightarrow S_2 = a+rd$$

$$S_1 = \frac{1}{r} S_2 \Rightarrow a+1 \cdot d = \frac{1}{r} (a+rd) \Rightarrow r(a+1 \cdot d) = a+rd \Rightarrow 1 \cdot a + r \cdot d = a+rd \Rightarrow 1 \cdot a = a \Rightarrow a = a$$

$$\frac{a+d}{a} = \frac{a_r}{a} = \frac{\frac{d}{r} + d}{\frac{d}{r}} = \frac{\frac{r \cdot d}{r} + d}{\frac{d}{r}} = \frac{r \cdot d + d}{\frac{d}{r}} = \frac{d(r+1)}{\frac{d}{r}} = r(r+1)$$

$$t_1 = a+1d / t_2 = a+2d / t_3 = a+3d / t_n = a+n \cdot d \Rightarrow t_n - t_{n-1} = d =$$

$$[a+(n-1)d] - [a+(n-2)d] = d \Rightarrow d = d \Rightarrow d = d$$

$$t_1 = a+1d / t_2 = a+2d = \frac{(a+1d)^2 - (a+2d)^2}{(a+1d) - (a+2d)} = \frac{[a^2 + 2ad + d^2] - [a^2 + 4ad + 4d^2]}{-d} = \frac{-2ad - 3d^2}{-d} = 2a + 3d$$

$$\frac{2a + 3d}{a+1d} = \frac{2a + 3d}{a+1d} = \frac{2a + 3d}{a+1d} = \frac{2a + 3d}{a+1d}$$

$$A = 1(1-\sqrt{3}) / B = 1+\sqrt{3} \Rightarrow a_k = a+1 \cdot d = B \Rightarrow A+1 \cdot d = B$$

$$1-1\sqrt{3} + 1d = 1+\sqrt{3} \Rightarrow d = 2\sqrt{3}$$

$$1d = 1-1\sqrt{3} + 1\sqrt{3} = 0 \Rightarrow d = 0$$

$$r_1, r_2 \rightarrow r_{n-1} \rightarrow r_n = 11 \Rightarrow r_1, r_2, \dots, r_{n-1}, r_n$$

$$a_1, a_2, \dots, a_{n-1}, a_n \Rightarrow n=3 \Rightarrow (r_1+r_2)=9$$

$$r_1 + (r_{n-1}) = r_n - 1 \Rightarrow a_k = a + (k-1)d \Rightarrow a_{n-1} = a + (n-2)d$$

$$= r_1 \Rightarrow (r_{n-1})d = r_1 \Rightarrow d = \frac{r_1}{r_{n-1}}$$

$$n \times \frac{r_1}{r_{n-1}} = 9 \Rightarrow r_1 \cdot n - 11 = r_1 \cdot n \Rightarrow r_1 = 11 \Rightarrow n = 3$$

$$a_n + a_{n+r} = a_r + a_{1r} \Rightarrow a + (n-1)d + a + (n+r)d = a_r + rd + a_r + rd \Rightarrow$$

$$2a + (2n+r)d = 2a_r + 2rd \Rightarrow 2(n+r)d = 2rd \Rightarrow nd = rd \Rightarrow n = r$$

$$a_n = r(a_r) \Rightarrow a + nd = r(a + rd) \Rightarrow a + nd = ra + rd \Rightarrow ra + rd = a + nd$$

$$\Rightarrow a + d = a \Rightarrow a + d = a_r \Rightarrow a + d = a_r$$