

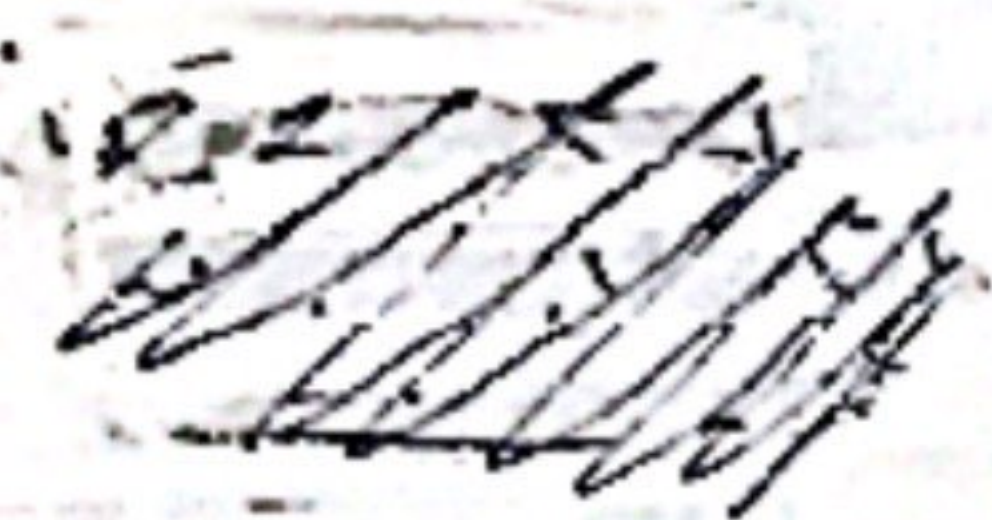
$$ra + ra + rd + ra + rd + ra + rd + ra + rd = a + ad + a + rd + a + rd + a + rd + a + rd$$

$$10a + 4rd = 4a + 4rd$$

$$ra + rd = a + rd$$

$$ra = d$$

$$\frac{ra}{a} = r \quad \checkmark$$



(2)

$$t_n - t_{n-r} = rd = 1d$$

$$d = a \quad a + (ra + rd) \quad a + (ra + rd)$$

$$\frac{(a + rd)(a + rd) - (a + rd)(a + rd)}{a + rd} = \frac{rd + rd}{a + rd} = \frac{rd + rd}{a + rd} = r \quad \checkmark$$

(2)

$$d = \frac{r + \sqrt{r} - r + 1\sqrt{r}}{r + 1} = \frac{1\sqrt{r}}{r} = \sqrt{r} \quad \checkmark$$

(2)

$$d = \frac{r - r}{r - r} = \frac{r}{r - r}$$

(2)

$$d = \frac{11 - r}{n + 1 - 1} = \frac{9}{n}$$

$$\frac{r}{r - r} = \frac{9}{n} \quad r - r = r - r = 11$$

$$r - r = 11$$

$$n = r \quad \checkmark$$

$$a_n + a_{n+r} = ar + ar$$

(2)

$$n + n + r = r + r$$

$$r = 19$$

$$n = 1$$

$$a_1 + a_{1+r} = ar + ar$$

$$\frac{a + rd}{a + rd} = r$$

$$a + rd = ra + rd$$

$$a = -d$$

$$a + d = 0 \rightarrow -d + d = 0 \quad \checkmark$$

(2)

$$a_1 = 40$$

$$a_4 = 41$$

$$a_d = 21$$

$$d = 7$$

$$40 + 7n - 7 = 201$$

$$n = 25 \checkmark$$

۲۰ آخرین!

امیرحسین نجفیان

(۲)

اولین عدد که بر ۷
باقی مانده ۳ دارد = 101

$$\frac{997-101}{7} + 1 = 129 \checkmark$$

تعداد

(۲)

آخرین عدد که بر ۷
باقی مانده ۳ دارد = 997

$$a_1 + a_9 + a_{10} = -20$$

$$a_{13} + a_{19} + a_{17} = -72$$

$$2(a_1 + a_{17}) = -102$$

$$a_1 + a_{17} = -51 \checkmark$$

(۲)

$$(2 \times 2^x) = 2^{2x} - 5 + 2^x = 1$$

$$2^x \times 2 + 4 \times 2^x = 8 \times 2^x$$

$$2^{2x} - 2 + 2^x - 1 = 2 \times 2^{2x+1}$$

$$2^{2x} - 2 + 2^x - 1 = 2^{2x+2}$$

$$(2^x)^2 - 2(2^x) - 4 = 0 \Rightarrow (2^x - 4)(2^x + 1)$$

$$2^x = 4 \Rightarrow x = 2$$

$$a_2 = 2$$

$$a_1 = 1$$

$$a_{13} = 13$$

$$a_1 + a_{13} = 14 \checkmark$$

جوابی ۸ و ۱۳ است

(۲)

$$a_{10} - a_{17} = 7d$$

$$a + 9d - (a + 11d) = -2d = 7$$

$$a + 9d + a + 11d = 2a + 20d = 28$$

$$2a + 11d = 20$$

$$a + 9d = 14$$

$$9d = 6$$

$$a = 2$$

$$a_{21} = 2 + 20d = -18 \checkmark$$

$$a_{17} - a_{10} = 7d$$

$$a + 11d - a - 9d = 2d = 7$$

$$a + 11d + a + 9d = 2a + 20d = 28$$

$$a + 11d = 14$$

$$a_{17} = 14$$

$$a_{10} = 7$$

$$a_{21} = 10 + 11(7) = 87 \checkmark$$

(۲)