

نام و نام خانوادگی نمره امتحان پاسخنامه تشریحی تکلیف شماره کلاس

$$t_1 = r_0$$

$$t_r = t_1 + r_0 d = 41 \rightarrow r_0 d = 21 \rightarrow \sqrt{d} = 7$$

$$a_n = r_0 + (n-1)d$$

$$r_0 \cdot 1 = r_0 + 11d - 7 \rightarrow r_0 \cdot 1 - r_0 + 7 = 11d \rightarrow 11d = 7 \rightarrow \sqrt{n} = 25$$

1

$$100 \leq 7n + 3 \leq 1000 \rightarrow 97 \leq 7n \leq 997 \rightarrow 13.8 \leq n \leq 142$$

$$n = 140 \text{ یا } 142 \rightarrow n = 14 \rightarrow 101$$

$$n = 142 \rightarrow 997 \rightarrow \sqrt{997} = \frac{997 - 101}{7} = 129$$

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$$a_{n+1} = a_1 + nd \rightarrow a_1 + nd$$

$$a_{n+2} = a_1 + (n+1)d \rightarrow a_1 + nd + d$$

$$a_{n+3} = a_1 + (n+2)d \rightarrow a_1 + nd + 2d$$

$$\left. \begin{array}{l} a_{n+1} = a_1 + nd \\ a_{n+2} = a_1 + nd + d \\ a_{n+3} = a_1 + nd + 2d \end{array} \right\} \Rightarrow \begin{array}{l} r_0 a_1 + r_0 nd + r_0 d = -4n + 12 \\ r_0(a_1 + nd + d) = r_0(-2n + 4) \end{array}$$

$$a_1 + nd + d = -2n + 4 \rightarrow \sqrt{d} = 2, a_1 - 2 = 4 \rightarrow \sqrt{a_1} = 4$$

$$a_{10} + a_8 = a_1 + 9d + a_1 + 7d = r_0 a_1 + r_0 d = 12 - 44 = -32$$

3

$$t_r = t_1 + r_0 d = r^{x+1} - 1$$

$$t_n = t_1 + n_0 d = r^{x+1} - 1 \Rightarrow d = r^{x+1} - (r^x - 1) = r^{x+1} - r^x + 1$$

$$t_{13} = t_n + d = r^{x+1} - r \rightarrow r^{x+1} - r^{x+1} + r^{x+1} - r^x + 1 = r^x (r^{x+1}) - r^x + 1 = r^{2x} - r$$

$$x = 2 \rightarrow r^2 - 1 = r, t_2 = 3$$

$$x = 2 \rightarrow r^{2+1} = r^3 = 1 \rightarrow t_3 = 1$$

$$x = 2 \rightarrow r^2 - r = 14 - 3 = 11 \rightarrow t_{13} = 11$$

$$\left. \begin{array}{l} r^{x+2} - r^{x+1} + 1 = r^{2x} - r \\ r^{x+2} = r^{2x} \end{array} \right\} \Rightarrow \begin{array}{l} x+2 = 2x \\ x = 2 \end{array} \rightarrow \sqrt{x} = 2$$

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$$t_{12} - t_{10} = 2d = 5 \rightarrow d = \frac{5}{2} = 2.5$$

$$t_{10} + t_{12} = r t_1 + r_0 d = 15 \rightarrow r t_1 = 15 \rightarrow t_1 = -12.5$$

$$t_{21} = t_1 + r_0 d \rightarrow -12.5 + 50 = \sqrt{50} \cdot 5$$

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$$t_1 + t_r + t_v + t_f + t_a = \frac{1}{f} (t_u + t_v + t_r + t_a + t_{10})$$

$$r(a t_1 + 10d = \frac{1}{f} (a t_1 + r a d)) \rightarrow 1 a t_1 + r a d = a t_1 + r a d \rightarrow 10 t_1 = a d \rightarrow d = r t_1$$

$$\frac{t_r}{t_1} = \frac{t_1 + d}{t_1} = \frac{r t_1}{t_1} = \boxed{r}$$

6

$$t_n = t_{n-r} + 1a$$

$$n = r \rightarrow t_r = t_1 + 1a \rightarrow t_r = t_1 + r d \rightarrow r d = 1a \rightarrow \boxed{d = a}$$

$$t_q = t_a + r d \rightarrow t_a + r_0 \rightarrow (t_a + r_0) r - t_a r = t_a r + r_0 r + r_0 t_a - t_a r = r_0 (10 + t_a)$$

$$t_v = t_a + r d \rightarrow t_a + 1a$$

$$\frac{r_0 (10 + t_a)}{t_a + r_0} = \boxed{r_0}$$

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$$d = \frac{b-a}{n+1} \rightarrow d = \frac{r + \sqrt{r} - (r - 1\sqrt{r})}{1r + 1} = \frac{1\sqrt{r}}{1r} = \sqrt{r}$$

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$$d = \frac{r(r-1)}{r(n-1)+1} = \frac{r_0}{r(n-1)} = \frac{r \times 1a}{r(n-1)} = \frac{1a}{r(n-1)}$$

$$a_{n+1} = r + n d \rightarrow 11 = r + n \left(\frac{1a}{r(n-1)} \right) \rightarrow 9 = \frac{1a n}{r(n-1)} \rightarrow 1a n - 9 = 1a n \rightarrow r n = 9$$

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$$\left. \begin{array}{l} a_n = a_1 + (n-1)d \\ a_{n+r} = a_1 + (n+r-1)d \\ n d + r d \end{array} \right\} \Rightarrow \begin{array}{l} r a_1 + r n d + r d = a_1 + r d + a_1 + 14d \\ (r n + r) d = 14d \\ r n + r = 14 \rightarrow r n = 14 \rightarrow \boxed{n = 1} \end{array}$$

$$\begin{array}{l} a_n = a_1 + (n-1)d \\ \frac{n}{r} = a_1 + \left(\frac{n}{r} - 1 \right) d \rightarrow a_1 + v d = r (a_1 + r d) \rightarrow a_1 + v d = r a_1 + 9d \\ r a_1 = -r d \rightarrow \boxed{a_1 = -d} \end{array}$$

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