

$$a_1 = f_0$$

$$a_{\infty} = 41$$

$$\frac{a_1 - f_0}{f - 1} = \frac{r_1}{f} = V$$

$$\frac{vn}{v} + \alpha = f_0$$

$$= 4\alpha = 33$$

مسئله ۱

$$201 - 33 = 175 \quad 175 + v = \boxed{20}$$

$$r(a_1 = f_0) + rd$$

$$a_{\infty} = 41$$

$$f_0 + rd = 41$$

$$rd = 21 \quad d = v$$

الفردی برای برداشتن d

$$18xv = 91$$

$$91 + r = 1.1$$

$$182xv = 998 \quad 998 + r = 999$$

$$vn + r = 1.1 \quad n = 18 \quad vn + r = 999$$

$$\frac{182 - 18}{1} + 1 = \boxed{179}$$

$$n = 182$$

$$a_{n+1} + a_{n+r} + a_{n+r} = -9n + 12$$

مسئله ۳

$$a_{n+1} + a_{n+r} = a_{n+r} = 4 \quad 3a_{n+r} = 9n + 12 \quad 3a_{n+r} = 3(-2n + 4)$$

$$\text{if } n=10 \quad a_{10} = \frac{-2 \times 10}{-2} + 4 = -29$$

$$a_1 = \frac{-2 \times 4}{-12} + 4 = -1$$

$$\text{if } n=4$$

$$a_{10} + a_1 = -1 + -29 = \boxed{-30}$$

مسئله ۴

$$r^{\alpha} - 1 = a_r$$

$$r^{\alpha+1} = a_1$$

$$r^{2\alpha} - r = a_{1r}$$

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

$$= 2r^{\alpha} - 1 + r^{2\alpha} - r = r^{\alpha} + r$$

$$r^{2\alpha} + r^{\alpha} - \varepsilon = r^{\alpha} + r$$

$$r^{2\alpha} - \varepsilon = r^{\alpha} + r - r^{\alpha}$$

$$r^{2\alpha} - \varepsilon = r^{\alpha}(f-1)$$

$$r^{2\alpha} - \varepsilon = r^{\alpha} \times r^{\alpha}$$

$$r^{2\alpha} - r^{\alpha} \times r^{\alpha} - \varepsilon = 0$$

$$\frac{r^{\alpha} - 1}{r} + \frac{r^{\alpha+1}}{r} + \frac{\varepsilon}{r} - r = \boxed{r\varepsilon}$$

$$(r^{\alpha} - \varepsilon)(r^{\alpha} + 1) = 0$$

$$\alpha = 2$$

$$\left. \begin{aligned} a_{1r} - a_{1o} &= a \\ a_{1r} + a_{1o} &= 2a \end{aligned} \right\} \begin{aligned} \frac{2a + a}{r} &= 10 \Rightarrow a_{1r} \\ \frac{2a - a}{r} &= 10 \Rightarrow a_{1o} \end{aligned}$$

سوال ۱۰

$$a_1 + 11d - a_1 - 9d = a$$

$$2d = a \quad \boxed{d = \frac{a}{2}}$$

$$a_{1o} = a_1 + \underbrace{9d}_{\frac{9a}{2}} = 10 \Rightarrow a_1 = \boxed{-12.5}$$

~~$$a_{1r} = 10$$~~

$$a_{1r} = -12.5 + \frac{9a}{2} = \frac{+3va}{10}$$

سوال ۹

$$\frac{a}{r}(ra_1 + \epsilon d) = \frac{1}{r} \frac{a}{r} (a_1 + 2d + a_1 + 9d)$$

$$\frac{a}{r}(ra_1 + \epsilon d) = \frac{1}{r} \frac{a}{r} \underbrace{(a_1 + 2d + a_1 + 9d)}_{2(a_1 + 7d)}$$

$$\frac{ra_1}{r} = \frac{2a}{r} \quad \epsilon r$$

$$2(a_1 + 7d) = \frac{a}{r}(a_1 + 7d) \quad ra + 7d = a + 7d \quad ra = d \quad a = \frac{d}{r}$$

سوال ۷

$$t_n = t_n - r + 10 \quad \text{if } n = 9 \quad t_9 = t_9 + 10$$

$$\text{if } n = 12 \quad t_{12} = t_n + 10$$

$$-t_9 = -t_{12} + 10 \quad t_9 = t_{12} - 10$$

~~$$\text{if } n = 9 \quad t_9 = t_9 + 10$$~~

~~$$\text{if } n = 12 \quad t_{12} = t_9 + 10$$~~

$$t_{12} - 10 = t_9 + 10$$

$$a_1 + 11d - 10 = a_1 + 9d + 10$$

$$11d - 9d = 20 \quad 2d = 20 \quad d = 10$$

$$(a_1 + 10d)^r - (a_1 + 9d)^r$$

$$a_1^r + \epsilon_0^r + 10a_1 - a_1^r - 9a_1 - \epsilon_0 a_1$$

$$= 4\epsilon_0^r + 10a_1$$

$$t_v = a_1 + \frac{r_0}{q_d}$$

$$(a_1 + \frac{r_0}{q_d})^x = 4\epsilon_0 a_1 + 10a_1$$

$$\Rightarrow \boxed{x = \epsilon_0}$$

$$r + 6r \quad r(1 - 4r^2)$$

$$r - 12r^3$$

مسألة 1 ≤ 1

$$\frac{r + 6r}{r + 1} = r(1 - 4r^2)$$

$$\frac{r + 6r}{r + 1} = \frac{r(1 - 4r^2)}{r + 1} = \frac{r(1 - 4r^2)}{r + 1} = 1 - 4r^2$$

مسألة 9 ≤ 9

$$3r - r = 30$$

$$\frac{30}{r_{n-1}} = \frac{1a}{r_{n-1}} = d$$

والله اعلم

$$n+1 = r + (n+1-1) \frac{1a}{r_{n-1}} = 4r + \frac{1a n}{r_{n-1}} = 11 \quad \frac{1a n}{r_{n-1}} = 9$$

$$11n - 9 = 1a n \quad 2n = 9 \quad n = 4.5$$

مسألة 10 ≤ 10

$$a_n = 3a_{n-1}$$

$$a_n + a_{n+1} = a_r + a_{r+1} \quad a_1 + vd = r(a_1 + rd) \quad a_1 + vd = 3a_1 + 9d$$

$$3 + 10 = 20 \quad n + n + 1 = 20 \quad 2n = 19 \quad n = 9.5$$

$$-a_1 + a_1 = 0$$



$$a_r = a_1 + d$$

$$a_1 - 3a_1 = -vd + 9d$$

$$-2a_1 = 9d$$

$$-a_1 = 4.5d$$