

$$a_1 + a_2 + a_3 = 21$$

$$a_1 \cdot a_2 \cdot a_3 = 48$$

$$f(1+q+q^2) = 21q \Rightarrow f(q^2 - 17q + 1) = 0 \Rightarrow q = \frac{17 \pm \sqrt{289 - 4}}{2} = \frac{17 \pm 15}{2}$$

$$q = \frac{1}{2} \text{ یا } q = \frac{1}{3}$$

$$(1/15)$$

چون ۱ و ۱/۱۵ است

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

$$1, 4, 9, \dots \Rightarrow v = 8 \left(\frac{1 - (\frac{1}{2})^v}{1 - \frac{1}{2}} \right) = 14 - (\frac{1}{2})^v = 14 - \frac{1}{2} = \frac{27}{2}$$

$$(2) \checkmark$$

$$1 + q + q^2 + q^3 + \dots = \frac{40}{21} \Rightarrow q = \frac{1}{2} \quad S_n = 3^n \left(\frac{1 - (\frac{1}{2})^n}{1 - \frac{1}{2}} \right) = 24 \cdot 3^n$$

$$(2) \checkmark$$

$$d = \frac{48-1}{4} = \frac{47}{4} = 10.25 = \frac{41}{4} \quad A = 1 + 3d = 1 + 30 \cdot \frac{47}{4} = 1 + \frac{141}{4}$$

$$= 1 + \frac{141}{4} = 1 + 35.25 = \frac{145}{4} \quad B = 1 + r^3 = 2^3 - 1 = 7 \quad A = \frac{4d}{2} = 41$$

$$A + B = \frac{4d}{2} + \frac{14}{2} = \frac{11}{2}$$

$$a_v = a \times q^4$$

$$48 = 1 \times q^4 \Rightarrow q = \pm 2$$

$$q = 2 \rightarrow B = 8$$

$$q = -2 \rightarrow B = -8$$

$$(1/25)$$

$$d = \frac{1}{2} \Rightarrow a_{100} = -48 + 99d = 1 \Rightarrow 99d = 49 \Rightarrow d = \frac{49}{99}$$

$$(2) \checkmark$$

$a_p = a + r d$ $a_v = a + q d$ $a_q = a + \lambda d$ $(a + q d)^r = (a + r d)(a + \lambda d)$ $(a + q d)^r \Rightarrow (a + r d)(a + \lambda d) = 0 \Rightarrow r a d + r_0 d^r = 0 \Rightarrow r d (a + \lambda_0 d) = 0$ $d = 0 \text{ ل } d = \frac{-a}{10}$	۶
$a_r = A + d$ $a_p = A + r d$ $a_\lambda = A + v d$ $(A + r d)^r = (A + d)(A + v d)$ $g_{10} = g_0 r^q = \frac{1}{f} \cdot r^q = \frac{1}{f} \cdot \Delta 12 = \boxed{12\lambda}$	۷
$r g r$ $r g r^r$ $g r^r$ $r g r^r - r g r = g r^r - r g r^r$ $r r - r = r^r - r r \Rightarrow r^r - r r + r = 0$ $\Rightarrow (r-1)(r-r) = 0$ $\boxed{r=r}$	۸
$a_f = \frac{\Delta}{f}$ $a_\lambda = \frac{1}{f}$ $a_{1r} = -1 \Rightarrow (a + \frac{\Delta}{f})(x-1) = (x + \frac{1}{f})^r$ $\Rightarrow \frac{-x}{f} - \frac{r1}{1f} = 0 \Rightarrow \frac{-r1}{f} \Rightarrow -f, -\Delta, -\frac{r\Delta}{f} \Rightarrow \boxed{q = \frac{\omega}{f}}$	۹
$r a + \lambda d = v r$ $a a^r = a + d$ $\left. \begin{array}{l} 1 + q^r + a^y + v r \Rightarrow q = r \\ d = v \end{array} \right\}$ $q = 1 \rightarrow d = 0 \rightarrow$ معنی نداشت	۱۰