

$$\frac{a}{x} \times a \times a \times a = 21 \rightarrow \frac{a^4}{x} + 2 + 2q = 21 \times q$$

$$a^4 = 21x \rightarrow a = 2$$

$$2 + 2q + 2q^2 = 21q$$

$$2q^2 - 19q + 2 = 0$$

$$2q^2 - 18q + 1q + 2 = 0$$

$$(q-1)(q-18) = 0$$

* چون q عددی غیر صفری باشد.

$$a = 1, S = a \left(\frac{q^n - 1}{q - 1} \right)$$

$$q = \frac{1}{2}$$

$$= 1 \times \left(\left(\frac{1}{2} \right)^n - 1 \right)$$

$$1 \times \left(\frac{2^n - 1}{2 - 1} \right) = 127$$

$$2^n - 1 = 127$$

$$2^n = 128$$

$$n = 7$$

* انتخاب $x = 2$ بود
 چرا که $x = 2$ انتخاب
 می شد که دوقالی هندسی
 بود.

$$1 + q + q^2 + q^3 + q^4 = \frac{121}{11}$$

$$a = 2 \times 3$$

$$a_1 + a_2 + a_3 + a_4 + a_5 = ?$$

$$a + aq + aq^2 + aq^3 + aq^4 = ?$$

$$a(1 + q + q^2 + q^3 + q^4) = 2 \times 3 \times \frac{121}{11} = 3 \times 22 = 66$$

$$d = \frac{b - a}{k + 1} = \frac{21 - 1}{5 + 1} = \frac{20}{6} = \frac{10}{3}$$

$$A = a_1 = a + 3d = 1 + 3 \times \frac{10}{3} = 1 + 10 = 11$$

$$B = a_1 = a + 3d = 1 + 10 = 11$$

$$A + B = 11 + 11 = 22$$

واسطی سوم = جملی سوم
 جملی چهارم = A
 واسطی سوم = جملی سوم
 جملی چهارم = B

$$d = \frac{-90}{4} + 21 = \frac{-90 + 84}{4} = \frac{-6}{4} = \frac{-3}{2}$$

$$a_{101} = a + 100d = -24 + \frac{100 \times (-3)}{2} = -24 - 150 = -174$$

$$a = 121$$

$$a_1 = 1$$

$$a_7 = 1$$

$$121 \times q^6 = 1$$

$$q^6 = \frac{1}{121} \rightarrow q = \frac{1}{11}$$

a^2 a^2 a^2 $a+rd$ $a+rd$ $a+rd$... $\rightarrow b^2 = ac$ $(a+rd)^2 = (a+rd)(a+rd)$ $a^2 + 2ard + r^2d^2 = a^2 + 10ad + 16d^2$ $2ard + r^2d^2 - 10ad - 16d^2 = 0$	$rd^2 + rad = 0$ $rd(10d+a) = 0$ $rd = 0 \rightarrow d = 0$ $10d+a = 0$ $10d = -a$ $d = -\frac{a}{10}$	* نکته مهم! ؟ ✓
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$\frac{a}{a+d} + \frac{a}{a+rd} + \frac{a}{a+rd} = 1$ $b^2 = ac \rightarrow (a+rd)^2 = (a+d)(a+rd)$ $a^2 + 2ard + r^2d^2 = a^2 + 10ad + 16d^2$ $2ard + r^2d^2 - 10ad - 16d^2 = 0$ $rd^2 - rad = 0$	$rd(d-a) = 0$ $rd = 0$ $d-a = 0$ $d = a$ $a' = a+d$ $\frac{1}{f} = d+d$ $a = d = \frac{1}{2}$ $a_{10} = a_9 = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$	* نکته مهم! ✓ با توجه به اعداد مابین:
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ra^2 ra^2 a^2 ra^2 ra^2 a^2 ... $\rightarrow b = \frac{a+c}{2}$ $ra^2 = \frac{ra^2 + a^2}{2}$ $ra^2 = \frac{a^2(r+1)}{2}$	$rq = \frac{r+q}{2}$ $r = r+q$ $q^2 - r^2 + r = 0$ $(q-1)(q-r) = 0$ $q = 1$ $q = r$	* نکته مهم! ✓
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$a+x$ $a+x$ $a+x$ $a=2$ $d = \frac{a}{x} - 1 = \frac{2}{x} - 1$ $a^2 = a+rd = 2 = \frac{2}{x} - 1$ $a^2 = a+rd = 2 - \frac{2}{x} = \frac{2}{x}$ $a^2 = a+rd = 2 - \frac{2}{x} = 2 - 1 = 1$	$b^2 = ac \rightarrow (x+\frac{1}{x})^2 = (x-1)(x+\frac{10}{x})$ $x^2 + \frac{1}{x} + \frac{x}{x} = x^2 + \frac{x}{x} - \frac{10}{x}$ $\frac{x}{x} + \frac{1}{x} - \frac{x}{x} + \frac{10}{x} = 0$ $\frac{1+x-1+x+10}{x} = 0$ $\frac{12}{x} = 0$ $x = -\frac{11}{2}$	* نکته مهم! دو راه:
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a $a+d$ $a+ad$ $a(a+ad) = (a+d)^2$ $a^2 + aad = a^2 + d^2 + 2ad$ $d^2 + rad - aad = 0$	$d^2 - rad = 0$ $d(d-a) = 0$ $d = 0$ $d = a$ * نکته مهم! * نکته مهم!	* نکته مهم! 1.
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