

نام و نام خانوادگی: شماره: کلاس: دهم پسر B

$a_n = \frac{1}{2} \times 2^n$ $a = \frac{1}{2}$ $q = 2$	$a_7 = \sqrt{16} \times 2 = 32$ $a_4 = 4$ $a_{10} = 256$	$a_{10} = aq^9 \rightarrow \frac{1}{2} \times 2^9$ (الف) $2^{-1} \times 2^9 = 2^8$	1
$a_{10} = aq^9 = 256 \Rightarrow 256 \times 2^9 = a_{10}$ $a_n = \frac{1}{2} \times 2^{n-1}$ (ج) $\rightarrow \frac{1}{2} \times 2^{n-1} = 128 \rightarrow 2^{n-1} = 256 \times 2^1$	$a_{10} = 256$	$a_{10} = aq^9$ (ب) $\frac{aq^9}{aq^1} = \frac{256}{2}$ $q^8 = 2^8$	2
$aq^7 = 12$ $aq^7 = 96$ $a \times 2^7 = 12$ $a = \frac{12}{2^7}$ $aq^9 = \frac{12}{2^7} \times 2^9 = 3 \times 2^2 = 12$	$\frac{aq^7}{aq^1} = \frac{96}{12} = 8$ $q^6 = 8$ $a = \frac{12}{2^7}$	$aq^9 = ?$ $a_{10} = aq^9 = 384$	3
$\frac{a_3}{q^2} \times \frac{a_3}{q} \times a^3 \times a_3 \times a_3 \times a_3 \times a_3 = 243 \Rightarrow a_3^5 = 243$ $a_3 = 3$ $a_1 \times a_5 = \frac{a_3}{q^2} \times a_3 \times q^4 \Rightarrow a_3 \cdot a_3 = 3 \times 3 = 9$			4
$2^a \cdot 2^b = 4\sqrt{2} \times 4\sqrt{2}$ $a+b = 5$	$2^{a+b} = 32$ $2^5 = 32$		5
$a_3 = 1-x$ $a_7 = x$ $a_{11} = x+1$ $\frac{x+1}{x} = \frac{x}{1-x} \Rightarrow x^2 = 1-x^2 \rightarrow 2x^2 = 1$ $x^2 = \frac{1}{2}$ $x = \pm \sqrt{\frac{1}{2}}$	$a_{11} = x+1$ $\frac{a_{11}}{a_7} = \frac{a_7}{a_3}$		6

$$1, 3, 9, 27, \dots \quad 27, 9, 3, 1$$

در این دنباله ها ی شصت

$$a(1+q^3) = 18 \quad aq(1+q) = 12$$

$$\frac{a(q+1)(q^2-q+1)}{a \cdot q(q+1)} = \frac{18}{12} \rightarrow 3q = 3q^2 - 3q + 3$$

$$3q^2 - 6q + 3 = 0 \rightarrow q^2 - 2q + 1 = 0 \rightarrow (q-1)(q-1) = 0 \quad q = 1, 3$$

$$a + aq + aq^2 = 13$$

$$a(1+q+q^2) = 13$$

$$\frac{18}{q}(1+q+q^2) = 13 \Rightarrow 3q + 3 + \frac{18}{q} = 13$$

$$3q + \frac{18}{q} = 10 \quad 3q^2 - 10q + 6 = 0 \rightarrow q = 2, \frac{1}{3}$$

$a \cdot aq \cdot aq^2 = 27$
 $a^3 q^3 = 27$
 $(aq)^3 = 27$
 $aq = 3$
 $a = \frac{3}{q}$

$$2, 6, 18, \dots \quad \begin{cases} a=2 \\ q=3 \end{cases} \quad S_n = \frac{a(q^n-1)}{q-1}$$

$$S_1 = \frac{2(3^1-1)}{3-1} = 2 \quad S_1 = 3^1 - 1$$

$$P_n = \sqrt[n]{(2 \times 6 \times 18 \dots)^n} \rightarrow P_1 = (a_1 \cdot aq^1)^5 = (2 \times 6)^5 \Rightarrow (2 \times 3^1)^5$$

$$a, aq, aq^2, aq^3 \rightarrow a - aq = aq - aq^2 = aq^2 - aq^3$$

$$a(1-q) = aq(1-q) = aq^2(1-q) \quad 1 = q = q^2 \quad q = 1$$

در این دنباله های کسری (a, aq, aq^2, ...) برابر q است

$$S_n = a + a+d + a+2d + \dots + a-(d) + a$$

$$S_n = \beta + \beta - d + \dots + \beta + d + \beta$$

$$2S_n = a + a + (a+d) + (a-d) \rightarrow 2S_n = n(a+a) \Rightarrow S_n = \frac{n}{2}(a+a)$$

$$2S_n = a + a + a + a + a + \dots$$

$$a = a + (n-1)d \quad S_n = \frac{n}{2}(a + a + (n-1)d) = \frac{n}{2}(2a + (n-1)d)$$

$$S_n = a + aq + aq^2 + \dots + aq^{n-1}$$

سوال دہم ← قسمت ۲

$$\rightarrow \times q \rightarrow qS_n = aq + aq^2 + aq^3 + \dots + aq^n$$

انہی را الزحوی کہری لیسر

$$\rightarrow S_n - qS_n = (a + aq + aq^2 + \dots + aq^{n-1}) - (aq + aq^2 + \dots + aq^n)$$

$$\rightarrow S_n(1 - q) = a - aq^n \xrightarrow{\div (1 - q)} (q \neq 1)$$

$$\rightarrow S_n = \frac{1 - q^n}{1 - q} \times a \rightarrow$$