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$$a_1 + a_2 + a_3 + \dots + a_n = 44$$

$$\frac{a_1}{q} + a_2 + a_3 + \dots + a_n = 44 \quad (a_1)^r = 44 \quad a_1 = 4$$

$$\frac{4}{q} + 4 + 4q = 44$$

$$\frac{4}{q} + 4q = 40$$

$$q < \frac{4}{4} \rightarrow \text{غیرممکن} \rightarrow q = \frac{1}{4}$$

$$x^r + 4, 2x, x^r - 2$$

$$\Rightarrow S_V = \frac{4^r - 1}{q - 1} = 4 \times \frac{12V}{\frac{1}{4}} = 4 \times 12V \times 4 = 192V$$

$$(x^r + 4)(x^r - 2) = (2x)^r$$

$$x^r - 2x^r + 4x^r - 8 = 4x^r$$

$$x^r + 2x^r - 4x^r - 8 = 0$$

$$x^r - 2x^r - 8 = 0 \quad x^r = 8$$

$$y^r - 2y - 8 = 0 \quad (y - 4)(y + 2) \rightarrow \begin{matrix} n = r \rightarrow 1 \rightarrow 4 \\ n = -r \rightarrow 1 \rightarrow -2 \end{matrix}$$

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

$$a_1 \left(\frac{1 + q + q^2 + q^3 + q^4}{\frac{1}{4}} \right) = 44 \times \frac{121}{4} = 1331$$

$$d = \frac{44 - 1}{4} = 10.75 \quad 1, 11.75, 22, \boxed{32.75}, 44, 55.75, 66$$

$$q^r = \frac{44}{1} \quad r^4 = 44 \quad q = 2 \quad 1, 2, 4, \boxed{8}, 16, 32, 64$$

$$q = -2 \quad 1, -2, 4, \boxed{8}, -16, 32, 64$$

$$A + B = 32.75 + 8 = 40.75$$

$$32.75 - 8 = 24.75$$

$$\frac{-94}{4}, \frac{-94}{4}, \dots$$

$$a_n = \frac{-94}{4} + (n-1) \frac{1}{4} = -23.5 + \frac{(n-1)}{4} = 1$$

$$128 q^v = 1$$

$$q^v = \frac{1}{128} \quad q = \frac{1}{2}$$

$a+rd \quad a+rd \quad a+rd$ $(a+rd)/(a+rd) = (a+rd)^r$ $a^r + rad + rad + \dots + rad = a^r + r \cdot a + r \cdot a + \dots + r \cdot a$ $r \cdot a = -r \cdot a$ $d = -r/a$ $d = -r/a$	6
$a+rd \quad a+rd \quad a+rd \Rightarrow rd \quad rd \quad rd$ $(a+rd)/(a+rd) = (a+rd)^r$ $a^r + rad + rad + \dots + rad = a^r + r \cdot a + r \cdot a + \dots + r \cdot a$ $r \cdot a = -r \cdot a$ $d = -r/a$ $d = -r/a$	7
$ra_r = \epsilon_1 \quad ra_q = \epsilon_1 \quad r(ra_q^r) = (ra_q)(a_q^r)$ $ra_r = \epsilon_r \quad ra_q^r = \epsilon_1 + d \quad ra_q^r = a_q(r+q^r)$ $a_r = \epsilon_r \quad a_q^r = \epsilon_1 + rd \quad r+q = r+q^r$ $q^r - r+q + r = 0$ $(q-1)(q-r)$ $q \neq 1 \Rightarrow q = r$	8
$r, \frac{r}{f}, \dots$ $a_n = a_1 + (n-1)d = r + (n-1)(-\frac{1}{f})$ $a_f = r + (f)(-\frac{1}{f}) = \frac{r}{f}$ $a_{1f} = r + (1f)(-\frac{1}{f}) = -1$ $a_{1f} = r + (1f)(-\frac{1}{f}) = -1$ $\frac{r}{f} + n, \frac{1}{f} + n, -1 + n$ $(\frac{r}{f} + n)(-1 + n) = (\frac{1}{f} + n)^r$ $\frac{r}{f} = -\frac{1}{f}n$ $n = -\frac{r}{f}$	9
$a + aq^r + aq^s = vr$ $b = a \quad b+d = aq^r \quad b+4d = aq^s$ $\Rightarrow a+d = aq^r \Rightarrow d = a(q^r-1)$ $a+4aq^r-4a = aq^s \quad 4aq^r - 3a = aq^s$ $q^s - 4q^r + 3 = 0 \Rightarrow (q^r-1)(q^s-3) = 0$ $1 \rightarrow q^r = 1 \quad 3 \rightarrow q^s = 3$	10

$d = aq^r - a = a(q^r - 1) \rightarrow d = va \rightarrow d = v$

$a + aq^r + aq^s = vr \rightarrow a + 1a + 4a = vr \Rightarrow a = 1$

$r=1 \rightarrow d = a = 1$