

$$\frac{a_2}{q}, a_2, a_2 q$$

$$Sum = \frac{a_2 + a_2 q + a_2 q^2}{q} = 21 \Rightarrow \frac{q^2 + 4q + 4}{q} = 21$$

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$q = \frac{1}{4}$  ← غیرممکن باشد

$q = \frac{1}{4}$  و  $q^2 = \frac{1}{16}$

$$\Rightarrow 21q = 4q^2 + 4q + 4 \Rightarrow 4q^2 - 17q + 4 = 0$$

$$a_2 = a_2 q^2 = 4 \Rightarrow a_2 = 4$$

$$b^2 = ac$$

$$2n^2 = n^2 + 2n^2 - 1$$

$$2n^2 = n^2 - 1 \Rightarrow n = 2$$

$$\Rightarrow 2, 4, 1 \Rightarrow q = 2 \text{ یا } \frac{1}{2} \Rightarrow q = 2$$

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$$Sum = \frac{2 \times (2^5 - 1)}{2 - 1} = 62$$

ی تو نیم بیایم معادله را درجه ۵ حل کنیم ولی بیایم از خلاصه استفاده کنیم!

$$a_1 + a_1 q + \dots + a_1 q^4$$

$$= a_1 (1 + q + q^2 + \dots + q^4) = a_1 \times \frac{1 - 21}{1 - 2} = \frac{20}{1} \times \frac{1 - 21}{1 - 2} = 400$$

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$$q^{(n+1)} = 91^2$$

$$\Rightarrow q = 2 \Rightarrow A = 1 \times 2^5 = 32$$

$$(n+1)d = 91 - 1$$

$$\Rightarrow d = 10, n = 9 \Rightarrow B = 1 + (9-1) \times 10, n = 32, a$$

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$$Sum = 90, n$$

$$-\frac{99}{4}, -\frac{95}{4}, \dots$$

$$d = \frac{1}{4}$$

$$\Rightarrow a_{101} = -100 + 100 \times \frac{1}{4} = 1 \Rightarrow q = \frac{1}{2}$$

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| $a_1 + r d, a_1 + q d, a_1 + n d$ $(a_1 + q d)^r = (a_1 + r d)(a_1 + n d)$ $\cancel{a_1^r} + 1 \cancel{r a_1 d} + r^2 d^r = \cancel{a_1^r} + 1 \cdot a_1 d + 1 q d^r$ $r a_1 d = - r \cdot d^r \Rightarrow a_1 = -1 \cdot d$ <div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 10px auto;"> <math>d = \frac{-a_1}{10}</math> </div>                                                                                                                                                                                                                                                                                                         | 6  |
| <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <math>a_1 + d</math><br/>↓<br/><math>a</math> </div> <div style="text-align: center;"> <math>a_1 + r d</math><br/>↓<br/><math>a q r</math> </div> <div style="text-align: center;"> <math>a_1 + v d</math><br/>↓<br/><math>a q r^2</math> </div> </div> <div style="margin-top: 20px;"> <math display="block">r a_1, r^2 a_1, r^3 a_1 \Rightarrow q = r</math> <math display="block">\Rightarrow a_{10} = \frac{1}{r} \times r^3 = r^2 = 1 r^2</math> <math display="block">a_1 = d</math> </div> $q = \frac{a_1 + r d}{a_1 + d} = \frac{a_1 + v d}{a_1 + r d} \Rightarrow a_1^r + q a_1 d + q d^r = a_1^r + r a_1 d + v d^r$ | v  |
| $a_1, q, a_1 q^r, a_1 q^{r^2}$ $a_1, q, r a_1 q^r, a_1 q^{r^2} \quad q = r \text{ or } 1 \Rightarrow (q - r)(q - 1) = 0$ $r a_1 q^r = r^2 a_1 q^r \Rightarrow r q = r^2 + q^r \Rightarrow q^r - r q + r^2 = 0$ <div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 10px auto;"> <math>q = r</math> </div>                                                                                                                                                                                                                                                                                                                                     | r  |
| $a_n = \frac{-n + 4}{r}$ $a_r = + \frac{a}{r}$ $a_n = + \frac{1}{r}$ $a_{1r} = \frac{r^r}{r}$ <div style="margin-top: 20px;"> <math display="block">\frac{a + r n}{r}, \frac{1 + r n}{r}, \frac{-r + r n}{r}</math> <math display="block">1 q_n^r + n n + 1 = 1 q_n^r + r n - 1</math> <math display="block">n = -1</math> <math display="block">\Rightarrow n = \frac{-1}{r}</math> <math display="block">\frac{-1 q}{r}, \frac{-r}{r}, \frac{-r a}{r}</math> </div> <div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 10px auto;"> <math>q = \frac{a}{r}</math> </div>                                                                    | 9  |
| $a_1, a, q, r^2, a, q^4$ $a_1, a_1 + d, a_1 + q d$ $a_1 (a_1 + q d) = (a_1 + d)^r$ $\cancel{a_1^r} + q a_1 d = \cancel{a_1^r} + r a_1 d + d^r$ $v a_1 d = d^r \Rightarrow v a_1 = d$ $Sum = r a_1 + \frac{1 \cdot d}{v a_1} = v r$ $\Rightarrow a_1 = 1, d = v$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1. |