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$$\frac{11 + 1}{2} = \boxed{6}$$

①

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②

$n=1$ $k=0$

$n=2$

$n=3$

$n=4$

$n=5$

$1 = 2 \times 0 + 1$

$2 = 2 \times 1 + 0$

$3 = 2 \times 1 + 1$

$4 = 2 \times 2 + 0$

$5 = 2 \times 2 + 1$

$a_1 = -2 \times 0 + 1 = 1$

$a_2 = \left| \frac{2}{1+2} \right| + 1 = 1 + 1 = 2$

$a_3 = 2' = 2$

$a_4 = -2 \times 1 + 1 = -1$

$a_5 = \left| \frac{5}{1+2} \right| + 1 = 1 + 1 = 2$

$n=6$

$n=7$

$n=8$

$n=9$

$n=10$

$6 = 2 \times 3 + 0$

$7 = 2 \times 3 + 1$

$8 = 2 \times 4 + 0$

$9 = 2 \times 4 + 1$

$10 = 2 \times 5 + 0$

$a_6 = 2' = 2$

$a_7 = -2 \times 3 + 1 = -5$

$a_8 = \left| \frac{8}{4+2} \right| + 1 = 2 + 1 = 3$

$a_9 = 2' = 2$

$a_{10} = -2 \times 5 + 0 = -10$

$1 + 1 + 2 + 2 + 1 + 1 + 2 + 0 + 2 + 1 + 1 - 2 = 11$

$11 + 1 = 12$

$a = -1$

$a_1 = \left[\frac{1}{1} \right] - 1 = 0$

$a_2 = \left[\frac{2}{2} \right] - 1 = 0$

$a_3 = \left[\frac{3}{3} \right] - 1 = 0$

$a_4 = \left[\frac{4}{4} \right] - 1 = 0$

$a_{10} = 1 - a_{10} = 1$

$1 \times 1 + 0 + 0 = 1$

$a_n^2 + bn + c$

$a_n^2 + bn + c = 1$

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

$a = -1 \times \frac{1}{2} = -\frac{1}{2}$

$a_1 = -\frac{1}{2} + 1 = \frac{1}{2}$

$a_2 = -\frac{4}{2} + 1 = -1$

$-1 + 1 + c = 1 \Rightarrow c = 1$

$1 + 1 + c = 1 \Rightarrow c = -1$

$1 + 1 - 1 = 1$

$1 + 1 + c = 1 \Rightarrow c = -1$

$b = 1$

$b = 1$

$\frac{a_{10}}{a_1} = \frac{1}{1/2} = 2$

$A_n = a + (n-1)d$

$A_1 = B_1$

$A_n = B_n$

$A_1 = a + 0d = B_1 = b + 0q$

$B_1 = 0$

$B_n = b + (n-1)q$

$B_1 = 0$

$A_n = a + nd = B_n = b + qn$

$B_1 = b + 1q = 0$

$B_{10} = b + 9q = -9q + 9q = 0$

$(a + nd) - (a + 0d) = (b + 9q) - (b + 0q)$

$b = -9q$

$9d = 9q$

$q = d$

$q = \frac{1}{9}d \Rightarrow d = 9q$

$\frac{B_{10}}{d} = \frac{0}{9q} = 0$

$$4a^r = \omega a^r a + \kappa a^r a$$

$$r/a^r = a + \kappa d$$

$$\frac{a+d}{d} = \frac{a}{d} + 1$$

(4)

$$4(a+d)^r = \omega (a+\kappa d)^r a + \kappa (a+d)^r a$$

$$\frac{0 + \kappa a - \kappa a}{-\kappa a} = \frac{-\kappa a}{-\kappa a} = 1$$

$$4a^r + \kappa d^r + \kappa a d^r = \omega a^r + \omega a d^r + \kappa a^r + \kappa a d^r$$

$$-\kappa a^r + \kappa d^r - a d^r = 0$$

$$\frac{\kappa d + \kappa a}{0} = \frac{\kappa d}{0} \Rightarrow \text{مخرج صفر}$$

$$-a(\kappa + d) + \kappa d^r = 0$$

$$d(\kappa d - a) - \kappa a^r = 0$$

$$c, b, a$$

$$\frac{c}{r}, \frac{a}{r}, b$$

(5)

$$b = c + d \quad a = c + \kappa d$$

$$\frac{a}{r} = \frac{c}{r} q \Rightarrow a = \frac{c q}{r}$$

$$\frac{c q}{r} = c + \kappa d$$

$$\kappa d = c \left(\frac{q}{r} - 1 \right) \Rightarrow d = \frac{c}{r} \left(\frac{q}{r} - 1 \right)$$

$$b = \frac{c}{r} q^r$$

$$c + d = \frac{c}{r} q^r \Rightarrow c + \frac{c}{r} \left(\frac{q}{r} - 1 \right) = \frac{c}{r} q^r$$

$$1 + \frac{1}{r} \left(\frac{q}{r} - 1 \right) = \frac{q^r}{r}$$

$$1 + \frac{q}{r} - \frac{1}{r} = \frac{q^r}{r}$$

$$\kappa + q = q^r$$

$$\frac{1}{r} + \frac{q}{r} = \frac{q^r}{r}$$

$$q^r - q - \kappa = 0 \quad (q - \kappa)(q + 1) = 0$$

$$q = \kappa \quad q = -1$$

$$\kappa = \frac{1}{r} \Rightarrow -\kappa$$

برابر قرار بدهیم

$$b = a q, \quad c = a q^r$$

$$\kappa b - \kappa a = c - \kappa b$$

$$\kappa(a q) - \kappa a = a q^r - \kappa(a q)$$

(6)

$$\kappa a q - \kappa a = a q^r - \kappa a q \rightarrow a(\kappa - a q + \kappa) = 0$$

$$q^r - q + \kappa = 0$$

$$q = \frac{\kappa \pm \sqrt{\kappa^2 - 1}}{r} = \kappa \pm \sqrt{\kappa}$$

$$\frac{a q}{a q^r} = \frac{a q^1}{a q^r} = (q^{\kappa}) \Rightarrow (\kappa \pm \sqrt{\kappa})^{\kappa}$$

$$a_r = a q^0$$

$$a_r = a q$$

$$\frac{a q^0}{(a q)^r} + \frac{a q}{a^r} = \kappa$$

$$\frac{a q^0}{(a q)^r} = \frac{a q^0}{a^r q^r} = \frac{q^r}{a^r}$$

$$\frac{q^r}{a^r} + \frac{q}{a} = \kappa$$

(7)

$$a^r \left(\frac{q^r + q a}{a^r} = \kappa a^r \right)$$

$$q^r + q a = \kappa a^r$$

$$a_r = a^r \Rightarrow q = a$$

$$a_r = a - \kappa a = -\kappa a^r \Rightarrow q = -\kappa a$$

$$q = \frac{-a \pm \sqrt{a^2 + 4a^r}}{r} = \frac{-a \pm \kappa a}{r}$$

$$q = \frac{\kappa a}{a} = a$$

$$q = \frac{-a - \kappa a}{r} = \frac{-\kappa a}{r} = -\kappa a$$

$$\frac{a_r}{a_r}$$

$$\frac{a^r}{a^r} = 1$$

$$\frac{a^r}{a^r} = \frac{a^r}{-ra^r} = -\frac{1}{r}$$

$$a_{\mu}^{\nu} = a_{\nu}^{\mu}$$

$$a_{\nu}^{\nu} = 1$$

$$a_{\mu}^{\mu} = \mu \Rightarrow a_{\mu} = \mu$$

$$a_1 = \frac{1}{\mu}$$

$$\frac{1}{\mu} - \frac{1}{\mu} = \frac{1}{\mu}$$

$$1.0$$

$$a_{\nu} = \mu$$

$$a_1 = \frac{1}{\mu}$$