

$$1 \times 1, 2 \times 2, 3 \times 3, \dots, 99 \times 99$$

$$\frac{11 + 99}{2} = 55$$

المجموع

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$$1 \times 2, 2 \times 3, 3 \times 4, \dots, 99 \times 100$$

$$\frac{1+100}{2} = 50.5$$

$$a_1, a_2, \dots, a_n$$

$$an^2 + bn + c = 0$$

$$a \times 1 + b \times 1 + c = 15$$

$$a \times 9 + b \times 16 + c = 17$$

$$-\frac{1}{a} \times 15 + b + c = 15$$

$$-\frac{1}{a} \times 17 + b + c = 17$$

$$-\frac{15}{a} + b = 15$$

$$-15 + 1 \cdot b = 15$$

$$1 \cdot b = 30$$

$$b = 30$$

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

$$-\frac{1}{a} \times 15 + b + c = 15$$

$$-a + 16 + c = 15$$

$$16 + c = 15$$

$$c = -1$$

$$-\frac{1}{a} \times 15 \times 16 + 15 \times 16 - 1 =$$

$$-\frac{1}{a} \times 1 + 1 \times 16 - 1 =$$

$$\frac{16}{a} = \frac{1}{a} - \frac{1}{a} =$$

$$\frac{16}{a} - \frac{1}{a} - \frac{a}{a} = \left(\frac{15}{a}\right)$$

$$mn + b$$

$$a_1 + 1d = 1m + b$$

$$a_1 + 1d = 1m + b$$

$$1d = 1m$$

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

$$10m + b = 0$$

$$b = -10m$$

$$15m - 10m$$

$$5m$$

$$\frac{5m}{\frac{1}{1} m} = 5$$

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

$$t = 1 = \frac{q}{a}$$

$$r(a+d)^r = a(a+rd)(a) + r(a+d)a$$

$$a^r + rd^r + rad$$

$$ra^r + rd^r + rad = qa^r + 1 \cdot da + ra^r + rad$$

$$= ra^r + ad - rd^r = 0$$

$$\frac{ra^r}{d^r} + \frac{ad}{d^r} - \frac{rd^r}{d^r}$$

$$r\left(\frac{a}{d}\right)^r + \frac{a}{d} - r = 0 \quad (1)$$

$$\frac{a}{d} = t \quad rt^r + t - r = 0$$

$$rt^r + t - r = 0$$

$$(t+r)(t-r) = 0$$

$$-r \quad \frac{r}{r}$$

$$b = \frac{a+c}{r}$$

$$\frac{c}{r} = q\left(\frac{a}{r}\right) \Rightarrow c = rqa$$

$$b = q\left(\frac{c}{r}\right) \Rightarrow b = \frac{qc}{r}$$

$$b = \frac{q(rqa)}{c} = \frac{qr a}{r}$$

$$\frac{qr a}{r} = \frac{a + rqa}{r} \Rightarrow$$

$$qa = a(1 + rq)$$

$$q^r = 1 + rq \Rightarrow q^r - rq - 1 = 0$$

$$q = 1 \pm \sqrt{r} \rightarrow rq = r(1 \pm \sqrt{r})$$

$$= rq = r + r\sqrt{r}$$

$$a, b, c$$

$$\downarrow \quad \downarrow \quad \downarrow$$

$$\frac{a}{q}, a, aq$$

$$ra, ra, aq$$

$$\downarrow \quad \downarrow \quad \downarrow$$

$$ra, ra, aq$$

$$b = \frac{a+c}{r}$$

$$\epsilon a = raq + aq^r \rightarrow t = rq + t^r \rightarrow q^r + rq - t = 0$$

$$\Delta = b^2 - 4ac$$

$$\frac{a}{r} \quad \frac{r}{r}$$

$$\downarrow \quad \downarrow$$

$$-r \quad 1$$

$$\frac{aq}{aq} \rightarrow \frac{aq^r}{aq^r} \Rightarrow q^r = 1$$

$$(q-r)^r = -r$$

$$\frac{aq^r}{(aq)^r} + \frac{aq}{a^r} = r \quad \frac{a^r}{aq} = \frac{a}{q}$$

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

$$t^r - t - r = 0$$

$$t = -1 = \frac{q}{a}$$

$$t = r = \frac{q}{a}$$

$$aq^r = \sqrt{aq^r}$$

$$aq^r = r$$

$$aq = 1$$

$$q^r = r$$

$$q = r$$

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

$$\frac{1}{r} = \frac{1}{r} = \left(\frac{1}{r}\right)$$

$$t_n = an^2 + bn + c \rightarrow t_0 = 4a + b + c = 14 \quad \text{Ü, 1, 2} \rightarrow 14a + b = 1,4$$

$$\rightarrow t_1 = 9a + b + c = 17,4$$

$$a = \frac{-1}{v} (-t_0) = \frac{1}{v} (-14) = -\frac{1}{2} \rightarrow 14(-\frac{1}{2}) + b = 1,4 \rightarrow$$

$$a = -\frac{1}{2}, b = 4$$

$$b = 4$$

$$t_0 = -14 \rightarrow 4(-\frac{1}{2}) + 4(a) + c = 14 \rightarrow c = -1$$

$$t_{10} = 10^2(-\frac{1}{2}) + 4(10) - 1 = 14$$

$$t_1 = -\frac{1}{2}(1)^2 + 4(1) - 1 = 2,5$$

$$\rightarrow \frac{t_{10}}{t_1} = \frac{14}{2,5} = 5.6$$

$$4(a+d)^2 = 2a(a+4d) + 4a(a+d)$$

$$4a^2 + 4d^2 + 16ad = 2a^2 + 16ad$$

$$4a^2 + 4d^2 - 4d^2 = 0 \rightarrow a = \frac{\pm d + \sqrt{d^2 - 4(1)(-4d^2)}}{4} = \frac{-d \pm 4d}{4} \rightarrow a = -4d$$

$$1 \rightarrow \frac{a}{d} = \frac{-4d + 4d}{d} = 0 \checkmark$$

$$2 \rightarrow \frac{a}{d} = \frac{\frac{4d}{4} + 4d}{d} = \frac{4d}{d} = 4 \checkmark$$

$$a, b, c \xrightarrow{\text{حسابی}} b = \frac{a+c}{2} \rightarrow a = 2b - c$$

$$b, \frac{a}{2}, \frac{c}{2} \xrightarrow{\text{هندسی}} \frac{a^2}{2} = \frac{bc}{2} \rightarrow a^2 = bc \rightarrow bc = (2b-c)^2$$

$$4b^2 + c^2 - 4bc = bc \rightarrow 4b^2 - 4bc + c^2 = 0 \quad (b-c)(4b-c) = 0$$

$$b=c \rightarrow \text{عقده!} \quad \text{صحت متناظر!}$$

$$4b=c \rightarrow \text{ق ق} \checkmark \rightarrow \frac{a+4b}{2} = b \rightarrow a = -2b$$

$$\text{دنبال} \rightarrow b, \frac{a}{2}, \frac{c}{2} \rightarrow b, -b, b \rightarrow q = -1$$

$$2q = -2$$