

$$a_1 = 40 \quad a_4 = 41 \quad a_4 - a_1 = 3d = 41 - 40 = 1 \Rightarrow d = V$$

$$(n-1)V + 40 = 201 \Rightarrow 1V = 161 \Rightarrow V = 161$$

$$Vn + 39 = 201$$

$$n = 161$$

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اولین

$$a_1 + 3 = 101$$

آخرین

$$\frac{101 + 161}{2} \times 161 = 13116$$

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$$a_{n+1} + a_{n+2} + a_{n+3} = -4n + 11$$

$$\Rightarrow 3a_{n+2} = -4n + 11 \Rightarrow a_{n+2} = -\frac{4}{3}n + \frac{11}{3}$$

$$a_{17} = a_{12} + 5 = -\frac{4}{3}(12) + \frac{11}{3} = -17$$

$$-17 + (-1) = -18$$

$$a_1 = a_6 + 5 = -\frac{4}{3}(6) + \frac{11}{3} = -1$$

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$$a_p = 2^n - 1 \quad a_1 = 2^n + 1 \quad a_{17} = 2^{17} - 1$$

$$a_p + a_{17} = 2a_1 \Rightarrow 2^n - 1 + 2^{17} - 1 = 2(2^n + 1)$$

$$2^n + 2^{17} - 2 = 2^{n+1} + 2 \Rightarrow 2^n + 2^{17} - 4 = 2^{n+1}$$

$$2^{17} - 4 = 2^{n+1} - 2^n = 2^n(2 - 1) = 2^n$$

$$2^{17} - 4 = 2^n \Rightarrow 2^n = 2^{17} - 4$$

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$$a_{17} - a_{10} = 3d = 6 \Rightarrow d = 2$$

$$a_{17} + a_{10} = 2a + 10d = 2a$$

$$2a + 20 = 2a$$

$$\Rightarrow a = -10$$

$$a_{11} = 2(10) - 10 = 10$$

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$$a_1 + a_p + a_p + a_p + a_p = 2a + 10d$$

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$$\Rightarrow \frac{a_p}{a_1} = \frac{a+d}{a} = \frac{a+10a}{a} = 11 \checkmark$$

$$P(2a+10d) = 2a + P10d$$

$$10a + P10d = 2a + P10d$$

$$10a = 2a \Rightarrow 8a = 0$$

$$\frac{P_0}{P_d}$$

$$t_n = t_{n-P} + 10$$

$$\Rightarrow t_n - t_{n-P} = 10 \Rightarrow d = 10$$

$$\frac{(t_q + t_w)(t_q - t_p)}{t_v} = 10 \checkmark$$

$$d = \frac{P\sqrt{P} - P(1-4\sqrt{P})}{1P+1} = \frac{1P\sqrt{P}}{1P} = \sqrt{P} \checkmark$$

$$d = \frac{b-a}{k+1}$$

$$\frac{Pn-P}{Pn+P} = d$$

$$\Rightarrow P_0 = \frac{Pnd}{P_0} - Pd$$

$$\Rightarrow Pd = 4 \Rightarrow d = P$$

$$a_{n+1} = P + nd = 11 \Rightarrow nd = 9$$

$$nd = 9 \Rightarrow n = P \checkmark$$

$$a_p + a_{1p} = a_n + a_{n+p}$$

$$a_1 = Pa_p$$

$$a_1 + Pd = Pa_1 + Pd$$

$$Pd = -Pa_1$$

$$\Rightarrow Pn + P = P_0 \Rightarrow n = 1$$

$$a_1 + n-1(d) = 0$$

$$\Rightarrow -d + (n-1)d = 0$$

$$\Rightarrow d = (n-1)d$$

$$a_1 = -d$$

$$\Rightarrow n-1 = 1$$

$$\Rightarrow n = 2 \checkmark$$