

۲۰ و ۲۱

لعبه کراسین

ب. نام ضاع

تکلیف سری ۱۲

$$t_n = 5, 9, 13, 17, \dots$$

$$\text{ا) } t_n = 4n + 1$$

$$\text{ب) } t_{10} = 40 + 1 = 41$$

$$t_0 = 5, 10, 15, 20, \dots \quad t_n = 5n + 5 \quad t_{19} = 5 \times 19 + 5 = 118 \quad t_{20} = 5 \times 20 + 5 = 125$$

$$\text{ا) } S_n = \frac{n}{2} (2a_1 + (n-1)d) \rightarrow S_{10} = 5 (10 + (10-1)5) = 5 \times 55 = 275$$

$$\text{ب) } t_{19} + t_{20} + t_{21} + t_{22} \Rightarrow S_n = \frac{n}{2} (t_{19} + t_{22}) = 2 (118 + 125) = 498$$

$$1 + \sqrt{3}, 2, 3 - \sqrt{3}$$

$$t_{18} - t_{17} = t_{17} + 2d - t_{16} = 2d$$

$$d = 2 - (1 + \sqrt{3}) = 1 - \sqrt{3}$$

$$t_{18} - t_{17} = 2(1 - \sqrt{3}) = 2 - 2\sqrt{3}$$

$$a_n = 2^x, 3 \times 2^x, 5^y \rightarrow 3 \times 2^x - 2^x = 5^y - 3 \times 2^x$$

$$2 \times 2^x = 5^y - 3 \times 2^x$$

$$2 \times 2^x + 3 \times 2^x = 5^y$$

$$5 \times 2^x = 5^y \rightarrow 2^x + 1 = 5^y$$

$$2(5 - y) + 1 = 5$$

$$1 - 2y + 1 = 5$$

$$2 = 2y \rightarrow y = 1 \quad x = 1$$

$$2x - 8, 2x - 1, 4x, \dots$$

$$t_2 = t_1 + 2d$$

$$t_1 = 2x - 8 = -8$$

$$t_2 = -8 + 2d = 4$$

$$d = 2x - 1 - 2x + 8 = 7$$

$$4x - (2x + 1) = 7$$

$$2x = 8 \rightarrow x = 4$$

$$a_n = 3, 5, 7, \dots \Rightarrow d = 2$$

$$b_n = 2, 5, 8, \dots \Rightarrow d = 3$$

$$t_n = 5, 11, 17, \dots$$

$$t_n = 5n - 4 \rightarrow 5n - 4 \leq 100$$

$$5n \leq 104$$

$$n \leq 20.8$$

$$a_1 + a_r + a_n = 21$$

$$a_1 + a_r + a_n = 21$$

$$a_1 + a_r + a_n = 21$$

$$a_1 + a_r + a_n = 21$$

$$a_r - a_r + a_1 = 21$$

$$\frac{n}{2} (a_1 + a_r) = 21$$

$$a_1 + a_r = 14 \rightarrow a_r = 14 - a_1$$

$$a_r = a_1 + d$$

$$14 - a_1 = a_1 + d$$

(مسئله ۱ در صفحه بعد)

$$S_9 = 9 S_r$$

$$a_1 + a_r + \dots + a_9 = 9(a_1 + a_r + a_n)$$

$$\frac{9}{2} (2a_1 + 8d) = 9(\frac{9}{2} (2a_1 + 8d))$$

$$9a_1 + 36d = 9(9a_1 + 36d)$$

$$9a_1 + 36d = 81a_1 + 324d$$

$$9d = 11a_1$$

$$d = \frac{11}{9} a_1$$

$$\frac{a_r}{a_v} = \frac{a_1 + 19d}{a_1 + 8d}$$

$$= \frac{a_1 + 11 \times \frac{11}{9} a_1}{a_1 + 8 \times \frac{11}{9} a_1} = \frac{22}{17}$$

$$a_1 + a_r + a_v = 10$$

$$a_r + a_d = 10$$

$$a_r - d + a_r + a_r + d = 10 \quad a_r = 10$$

$$a_r = 0$$

$$a_r + r_d + a_r + r_d = 10$$

$$10 + 0d = 10$$

$$0d = 10$$

$$d = 10$$

$$a_1 = a_r + 1d$$

$$= 0 + 10$$

$$= 10$$

$$a_1 = 11$$

$$a_v = 10$$

$$11 + 4d = 10$$

$$4d = 10$$

$$d = 2.5$$

$$a_3 = a_1 + r_d$$

$$= 11 + 12$$

$$a_3 = 23$$

$$r_n - 12 = 10$$

$$r_n = 10 + 12$$

$$10 = r_d$$

$$-10 = d$$

$$r_n, r_r, r_d, r_d, 10, 12$$

$$-0, -0, -0, -0, -0$$

$$r_n = 10$$