

$$1) t_n = 8, 9, 13, 17, \dots$$

$$\text{الف) } f_{n+1}$$

$$f(n-1) + d = f_n - f + d = f_{n+1}$$

$$\text{ب) } n=1 \rightarrow f_{1+1} = f_2$$

$$2) t_n = 4, 10, 18, 28, \dots$$

$$f_{n+1}$$

$$\text{الف) } f_{n+2} \rightarrow n=1 \Rightarrow 4 \quad \frac{10}{2} \times (4+18) = 58$$

ب)

$$n=32 \Rightarrow f_{32+2} = 150$$

$$n=29 \Rightarrow f_{29+2} = 111$$

$$\frac{f_{111} + f_{150}}{2} = 99$$

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

$$t_n = 1 + \sqrt{2} + (-\sqrt{2} + 1) \times (n-1)$$

$$x + \sqrt{2} + (-\sqrt{2} + 1) \times n = x + \sqrt{2} - \sqrt{2}n + n$$

$$2\sqrt{2} - \sqrt{2}n + n$$

$$f_{22} \rightarrow 2\sqrt{2} - \sqrt{2} \times 22 + 22 = -2\sqrt{2} + 22$$

$$f_{10} \rightarrow 2\sqrt{2} - \sqrt{2} \times 10 + 10 = -2\sqrt{2} + 10$$

$$f_{22} - f_{10}$$

$$-2\sqrt{2} + 22 - (-2\sqrt{2} + 10)$$

$$\frac{2\sqrt{2} - 2}{1}$$

$$4) a_n = \Delta^m, r \times P \Delta^n, dy$$

$$\Delta^m \times r - (\Delta^m) = \Delta y - (r \times \Delta^m)$$

$$b_n = n, r, y$$

$$y \times \Delta^m - (r \times \Delta^m) = \Delta y$$

$$r - n = y - r$$

$$r = y - n$$

$$y = r + n$$

$$\Delta^m (y - 1) = \Delta y$$

$$\Delta^{m+1} = \Delta y$$

$$r + n = y$$

$$r + n = r + n$$

$$n = r$$

Parsian

$$y = v$$

$$r_m - r, r_m - 1, q_m, \dots$$

$$r_{m-1} = (r_m - 1) = q_m - (r_m - 1)$$

$$r_{m-1} = r_m + 1$$

$$r = r_m + 1$$

$$r = r_m$$

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

$$-r, 0, r$$

$$r_{m-1}$$

$$r_{m-1} - 1 = 1$$

$$a_n = r, d, v, \dots$$

$$r_{n+1} = r, d, v, \dots$$

$$b_n = r, d, v, \dots$$

$$q_{n+1} = r, d, v, \dots$$

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$$q_{n+1} = r, d, v, \dots$$

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$$q_{n+1} = r, d, v, \dots$$

$$a_1 + a_2 + a_3 = r$$

$$a_1 + a_2 + d + a_3 + r = r$$

$$r_{a_1} + r_d = r$$

$$a_1 + d = v$$

$$q_1 + r_d = r$$

$$q_1 + d = v$$

$$d = r$$

$$a_1 + a_2 + a_3 = 1.0$$

$$a_1 + a_2 + r_d + a_3 + r_d = 1.0$$

$$r_{a_1} + 4d = 1.0$$

$$q_1 + r_d = r$$

$$q_1 - q_2 + q_3 = n \times a_1$$

$$n = ?$$

$$a_1 + r = v$$

$$a_1 + r_d - q_1 - d + q_1$$

$$a_1 = -r$$

$$a_1 + d = n \times a_1$$

$$-r + r = -r \times n$$

$$\frac{v}{-r} = n$$

$$n = \frac{-1}{r}$$

$$a_1 + a_2 + d + a_3 + r_d = r_{a_1} + r_d = 1.0$$

$$a_1 + d = v$$

$$a_1 + r_d + a_3 + r_d = r$$

$$r_{a_1} + v_d = r$$

$$1.0 + d = r$$

$$d = 1.0$$

$$d = r$$

$$a_1 + q_d = r + 9 \times r = 19$$

$$9) S_9 = 9S_3$$

مساواة

$$\frac{x}{x} (a_1 + a_1 + 1d) = \frac{x}{x} \frac{r}{r} (a_1 + a_1 + 1d)$$

$$2a_1 + 1d = 4a_1 + 4d$$

$$\frac{a_1 + 1d}{a_1 + 4d}$$

$$1d = 3a_1$$

$$d = 3a_1$$

$$\frac{a_1 + 1(3a_1)}{a_1 + 4(3a_1)} = \frac{4a_1}{13a_1} = \frac{4}{13} = \boxed{3}$$

$$10) a_1 = 11$$

$$a_1 = 11$$

$$11 + 4d = 23$$

$$4d = 12 \quad d = 3$$

$$a_1 = 11 + 12 = 23$$

$$t_1 = 23$$

$$23 = 11 + 12$$

$$12 = 12$$

$$12 = 12$$

مساواة

$$11, 23, 28, 33, 38, 43$$

$$65$$