

$$1, 5, 12, 22, \dots$$

$$r a = 3$$

$$a = \frac{3}{r}$$

$$a_n = \frac{3}{r} n$$

$$a_{10} = \left(\frac{3}{r} \times 10\right) - \left(\frac{1}{r} \times 10\right) = 16$$

$$3\left(\frac{3}{r}\right) + b = 4$$

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

$$a + b + c = 1 \quad \frac{3}{r} - \frac{1}{r} + c = 1$$

✓

$$(1) \quad (2) \quad (3) \quad (4)$$

$$0, 1, 3, 6, \dots \quad n \frac{n(n+1)}{2} \rightarrow \frac{n(n-1)}{2} = a_n$$

$$a_n = \frac{n(n-1)}{2} = 55$$

$$n(n-1) = 110$$

$$\rightarrow \text{شکل یازدهم}$$

✓

$$S_n = \frac{n}{2} (a_1 + a_n)$$

$$S_n = \frac{n}{2} (5 + 21) = 34$$

$$S_n = \frac{n}{2} (5 + 13) = 27$$

✓

$$-\frac{1}{1}, -\frac{1}{2}, -\frac{1}{3}, -\frac{1}{4}, -\frac{1}{5}, \dots$$

$$\frac{1}{r} - (-1) = \frac{1}{r} + 1 = \frac{3}{r}$$

✓

$$b_3 = (-3)^3 - 11 = -27 - 11 = -38$$

$$a_k = -5k + 22$$

$$-5k + 22 = -38 \quad -5k = -60$$

$$k = 12$$

✓

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

$$q-1 = d \times r = r_0$$

(9)

9

$$a_n \rightarrow \frac{1-\frac{1}{r}}{1-\frac{1}{r}} = r = d$$

$$a_1 = 1 - r = r$$

$$ar = 1 + r = 11$$

$$b_1 = r$$

$$br = 11$$

$$d = 11 - r = 1$$

$$bn = 11n - d$$

(5)

Y

$$a_n = \frac{fn-r}{rn+r} < \frac{r}{r}$$

$$11n-r < 9n+9$$

$$2n < 19$$

$$n < 9.5$$

$$\boxed{n \leq 9}$$

(2)

1

$$t_n = 4, 9, 16, 25, \dots$$

$$+r \quad +0 \quad -r \quad -r$$

$$-r \quad -r \quad +r$$

$$-r = 1a$$

$$a = -1/d$$

$$ra+b=r$$

$$\frac{9}{r} + r = b \Rightarrow \frac{1d}{r} \Rightarrow t_n = \frac{r}{r}n^2 + \frac{1d}{r}n$$

$$a+b+c=4$$

$$\frac{1d}{r} - \frac{r}{r} + c = 4$$

$$\frac{1r}{r} = 4$$

$$r(-\frac{r}{r}) + d(\frac{1d}{r}) = 3r$$

(8)

9

$$t_n = -4, -1, 0, \dots$$

$$+r \quad +r \quad +r$$

$$ra=r$$

$$a=1$$

$$ra+b=r$$

$$r+b=r$$

$$b=0$$

$$a+b+c=-4$$

$$1-1+c=-4$$

$$c=-4$$

$$\Rightarrow t_n = n^2 - n - 4$$

$$d = \frac{r(1-r)}{1-r} = d$$

$$a_n = dn + r1$$

(9)

1.

$$dn+r1 = n^2 - n - 4$$

$$n^2 - 4n - rV = 0$$

$$(n-9)(n+r)$$