

* 2018학년도 대수능 수학 나형 27번.

$$\text{수열 } \{a_n\}. \quad \sum_{k=1}^{10} (a_k+1)^2 = \sum_{k=1}^{10} (a_k^2 + 2a_k + 1) = \sum_{k=1}^{10} (a_k^2 + 2a_k) + 10 = 28. \quad \therefore \sum_{k=1}^{10} (a_k^2 + 2a_k) = 18.$$

$$\sum_{k=1}^{10} a_k(a_k+1) = \sum_{k=1}^{10} (a_k^2 + a_k) = 16.$$

$$\therefore \sum_{k=1}^{10} a_k = 2. \quad \therefore \sum_{k=1}^{10} (a_k)^2 = 14 //$$

* 2018학년도 대수능 수학 나형 13번.

수열 $\{a_n\}$. $a_1 = 2$. n 은 자연수.

$$a_{n+1} = \begin{cases} a_n - 1 & (a_n \text{이 짝수}) \\ a_n + n & (a_n \text{이 홀수}) \end{cases}$$

$$\therefore a_2 = 1, a_3 = 3, a_4 = 6, a_5 = 5, a_6 = 10, a_7 = 9 //$$

* 2018학년도 대수능 수학 나형 14번.

$$\text{등차수열 } \{a_n\}. \quad a_5 + a_{13} = 3a_9. \quad \rightarrow a_5 + a_{13} = 2a_9. \quad \therefore 2a_9 = 3a_9 \text{ 에서 } a_9 = 0.$$

$$\sum_{k=1}^{18} a_k = \frac{9}{2}. \quad \rightarrow \sum_{k=1}^8 a_k = -\sum_{k=10}^{17} a_k. \quad (\because a_9 = 0 \text{ 인 등차수열}). \quad \therefore a_{18} = \frac{9}{2}.$$

$$\therefore \left. \begin{array}{l} a + 8d = 0 \\ a + 17d = \frac{9}{2} \end{array} \right\} \therefore 9d = \frac{9}{2} \text{ 에서 } d = \frac{1}{2}. \quad a = -4.$$

$$a_{13} = a + 12d = -4 + 6 = 2 //$$

$$(a_n = \frac{1}{2}n - \frac{9}{2}).$$