竜ヶ崎第一高等学校　白幡探究Ⅰ数学領域

米の量と人の数と数列と

Rice and People and Sequence

1年 F組 丙班

現代語訳

たとえば、人が30人いて、そのうちの一人が月の初めに朝ごはんだけを食べてほかに行った。2日目に同じく一人が朝ごはんを食べてほかに行った。3日目、4日目にも同じように一人ずつ朝ごはんを食べていく時、だんだん一日ごとに行き尽す時一人に一飯2.5合食べて朝夕必要なすべての米の量を求める事。

30人の30日分の米の量は、30×30＝900で900人分の米の量が必要だとわかる。これを、1日に一人ずつ他へ行くので、1日目には30人、2日目には29人になっていくので30日目には一人になるので、900を2で割って450人分の朝夕の米の量が必要だとわかる。→①

これに朝夕合わせて五合食べる。
100人で必要な米の量は、100×5＝500合なので、450人で必要な米の量は2250合（本文では2550合と書かれているが、これは間違い。）と知る。
ただし、杉形の法より同様に考えると30人のうち一人は夕ご飯を食べないので全体で
29人半として考えて、毎日半人ごと杉形の計算より減らせばいいと考えられるので、
数列の公式より→②

よって、全体の人数は、465人（本文では460人と書かれているが、間違い。）とわかる。
30日毎日、半人ずつ食べる量が減っていくので全体で15人分の米の量が必要ではなくなるとわかる。だから、全体で450人分の米の量が必要とわかる。→③

係：桑原

Modern translaition

英語訳

For example, the person being 30, one person among those eating just the breakfast in beginning the month, it went in other things.One person eating the breakfast similarly on 2nd day, it went in other things.When in the same way on also 3rd day and 4th day at a time one person keeping eating the breakfast, when gradually it goes day and exhausting one rice 2.5 go eating in one person, always calculating the quantity of the necessary all United States.

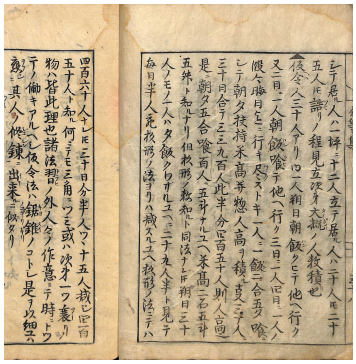
30 as for the quantity of the United States of 30 days, you know that the quantity of the United States equivalent to 900 is necessary with the 30×30=900.Because this, at a time one person it goes to other things on the 1st, because on 1st day on 30 and 2nd day it keeps becoming 29, because on 30th day you become one person, dividing 900 with 2, you know that the quantity of the United States of the morning and night equivalent to 450 is necessary.->① Always five go you eat together in this. Because the quantity of the necessary United States is 100×5=500 combination with 100 people, the quantity of the necessary United States 2250 go (with the text 2550 go is written with 450 people, but as for this the mistake.) With you know.

However, when you think in the same way than law of cedar shape, because one person among 30 evening does not eat the boiled rice, because it is thought, that everyday every semi- person calculation of cedar shape compared to it should have decreased altogether as 29 human half thinking, from formality of series ->② Depending, entire number of people are written 465 people (with the text 460 people, but the mistake.) With it is understood. Because 30 day everyday, at a time the semi- person the quantity which is eaten keeps decreasing, you know that the quantity of the United States equivalent to 15 stops being necessary altogether.Therefore, you know that the quantity of the United States equivalent to 450 is needed altogether.→③

係：菅野

English

原本



キーワード

★人数　the number of people

★米の量　the amount of rice

★杉形　shape Japanese cedar

★数列　sequence

Original

数学的内容

一日目　○○○○○○○○○……○○○○○○○○○　30人
二日目　○○○○○○○○○……○○○○○○○○　29人
三日目　○○○○○○○○○……○○○○○○○　28人
・
・
・
二十九日　○○　2人
三十日　○　1人

$$30\times30\times\frac{1}{2}=450 \quad \cdots①$$

$$\sum_{k=1}^{n}k=\frac{1}{2}n(n+1)$$

$$=\frac{1}{2}\times30(30+1)$$

$$=465 \quad \cdots②$$

$$465-30\times\frac{1}{2}=450 \quad \cdots③$$

係：神立

Mathematical content

英語訳

Day 1　○○○○○○○○○……○○○○○○○○○　30people
Day 2　○○○○○○○○○……○○○○○○○○　29 people
Day 3　○○○○○○○○○……○○○○○○○　28 people
・
・
・
Day 29　○○　2 people
Day 30　○　1 people

$$30\times30\times\frac{1}{2}=450 \quad \cdots①$$

$$\sum_{k=1}^{n}k=\frac{1}{2}n(n+1)$$

$$=\frac{1}{2}\times30(30+1)$$

$$=465 \quad \cdots②$$

$$465-30\times\frac{1}{2}=450 \quad \cdots③$$

係：小山，黒田

English

引用 Quote

見立算法規矩分等集　*Mitate Sanpou Kiku Buntousyu*
享保７年　*A.D.1730*
著者：万尾　時春　*Author：MASHIO,Tokiharu*

まとめ・今後の課題・感想

まとめ　Conclusion

この問題は杉形と数列を用いて、朝夕に必要な全ての米の量を求めるというものだった。

This problem demanded all quantity necessary for morning and evening of rice using conical form and progression

今後の課題　Future Issues

英訳が難しかったので次はもっとスムーズにできるようにする。

Because English translation was difficult, I can smoothen the next more

感想

問題文に図が無く、かなり苦戦したが、何とか現代語に直すことができた。数学的内容の部分は数列の公式に当てはめて答えを導くことができた。
〇を多用し、三十日を表現した。また、英語に直す作業が難しく、中々スムーズに進まなかったが、どの単語が正しいのか班のメンバーで話し合って何とか英訳することができた。また次にこのような機会があれば、今回よりもスムーズに作業を進められるように出来ればいいなと思う。

班長：小山

Conclusion - Future Issues and impressions

Impressions

A problem sentence did not have a figure and considerably had a hard fight, but was able to repair it in living language somehow
I applied the part of mathematical contents to several lines of formulas and was able to lead an answer
〇I used many and expressed 30th. In addition, work to translate into English was difficult and did not readily advance smoothly, but I talked about which word was right in the members of the group and was able to translate it into English somehow.
In addition, I think that work is pushed forward more smoothly than this time if there is such an opportunity next that it should be possible.