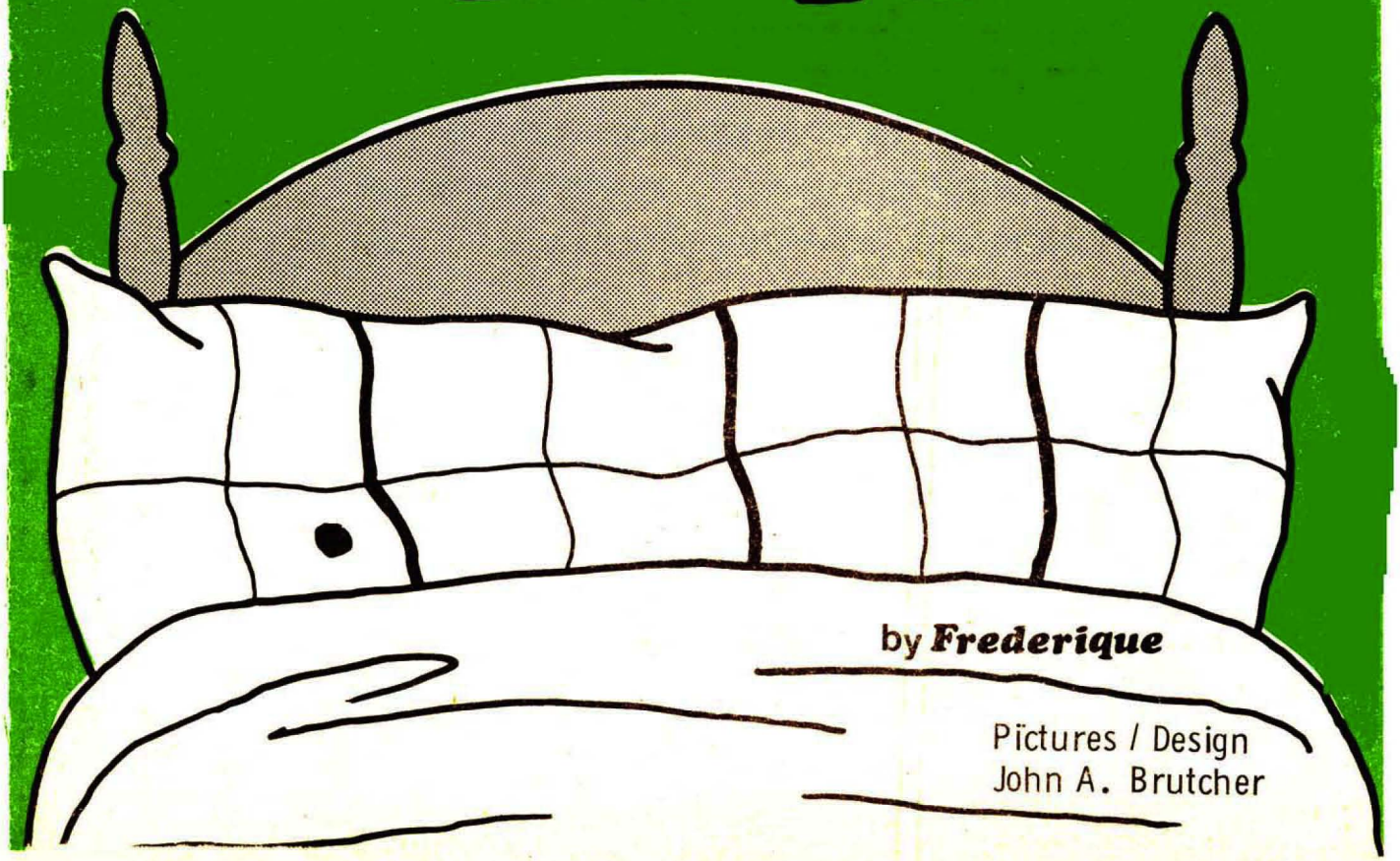
The CSMP Library

MATH STORY-WORKBOOKS

5-26301

NUMBER 1000's DREAM



by *Frederique*

Pictures / Design
John A. Brutcher

The CSMP Library

MATH STORY-WORKBOOKS

Current List

Ages 8-11

ROLLERSKATING 37
TO PICTURE
A SHORT STORY ABOUT 2 FRIENDS
A SHORT STORY ABOUT 3 FRIENDS
THE ISLAND OF TAM - TAM
THE TALKATIVE NUMBERS

Ages 9 - 14

SUMMER CAMP
HALLOWEEN PUZZLES
1,000's DREAM
A STRANGE COUNTRY
NOT TOO CLOSE
WHO ARE WE?
CLINTON STREET
A BOOK ABOUT ME
SEVEN SECRET NUMBERS
SHUNDA'S NEWSSTAND

A series of story-workbooks providing fanciful excursions in the colorful world of mathematics for all young people, their teachers and their parents, actively involving them in the acquisition of new mathematical insights.

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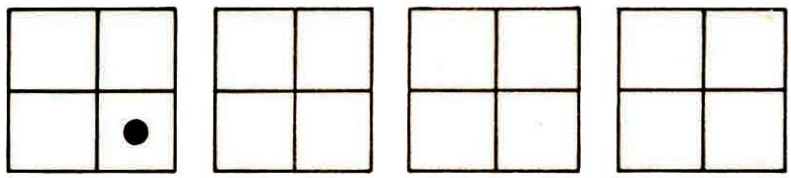
The energetic number 1,000 really enjoys his morning exercises. He jumps around on four Minicomputer boards demonstrating his chameleonic ability to alter his appearance while maintaining his identity as the number 1,000. Once a pattern is recognized in 1,000's transformations, the reader is encouraged to participate in subsequent changes.

However, 1,000 feels very confined on only four Minicomputer boards and is envious of 1,000,000,000 who exercises on ten boards. In a dream, 1,000 sees himself jumping with complete freedom on an endless road paved with Minicomputer boards. With little hope for a change in his sad situation, he recounts this strange dream to his friend 0. The ever clever number 0 is able to direct the timid 1,000 through a series of jumps which makes 1,000's dream come true.

"Number 1,000's Dream" introduces the idea of an infinite repeating decimal very naturally through the familiar language of the Minicomputer. The reader is led to realize that 999.9999 ... is another distinctive "signature" of 1,000.

Richard Armstrong

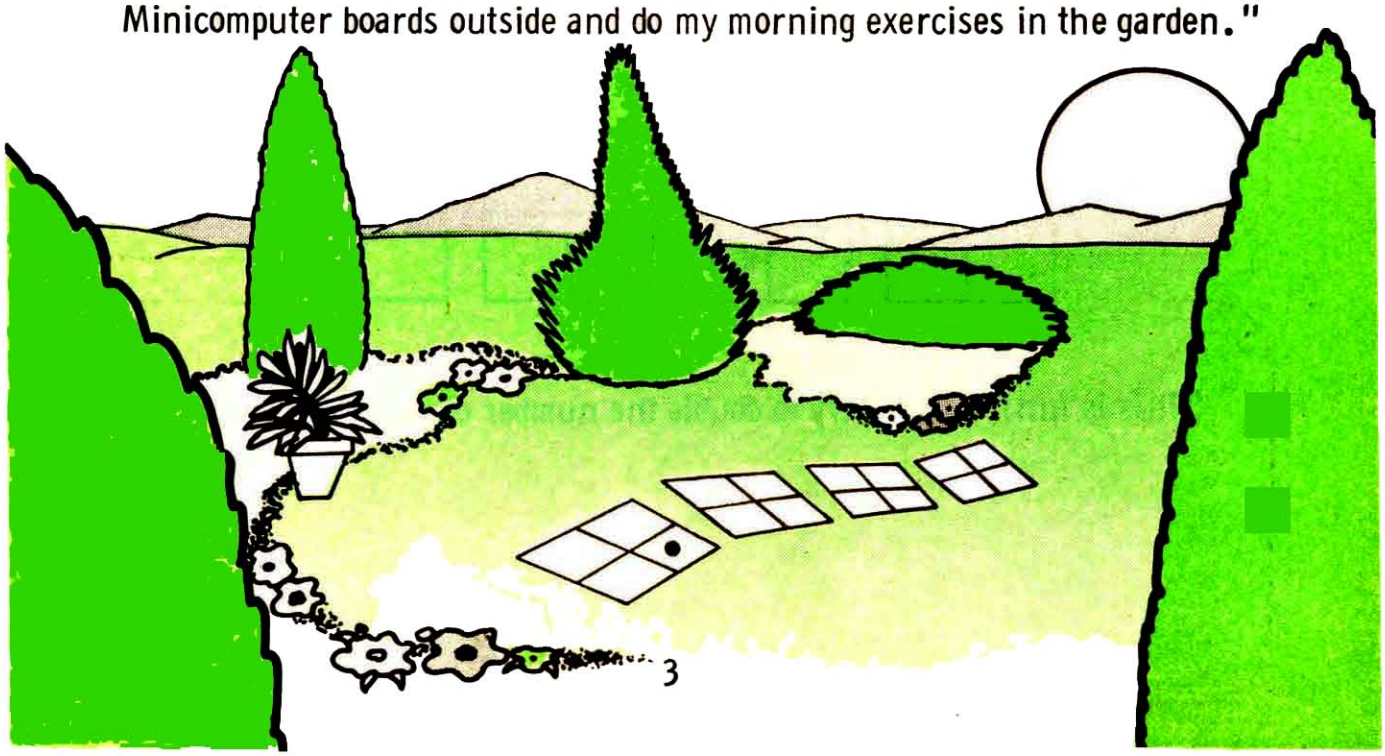
Do you see 1,000 asleep on his Minicomputer boards? Can you hear him snoring and see him dreaming?



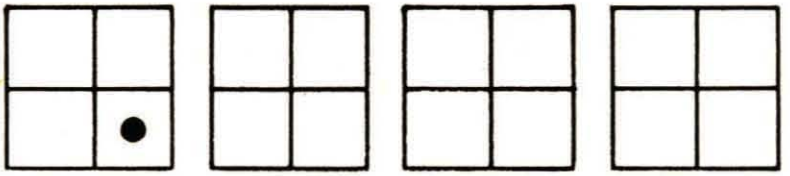
He opens one eye. He yawns and stretches himself. "What a pleasant night," he murmurs.

Then he gets up and looks out of the window.

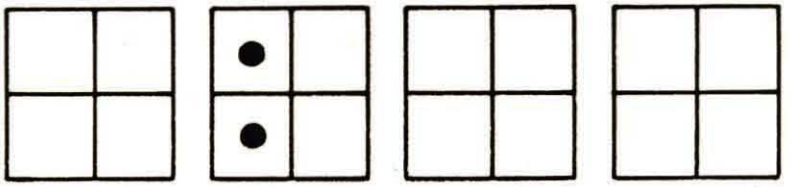
"The sunrise is so marvelous this morning that I think I'll take my Minicomputer boards outside and do my morning exercises in the garden."



In the garden,

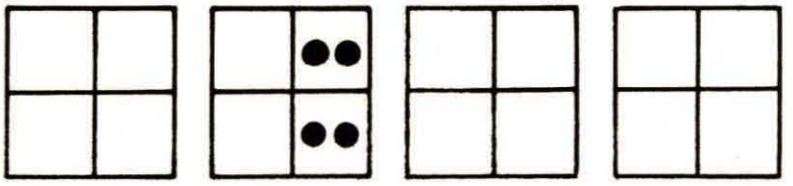


jumps.



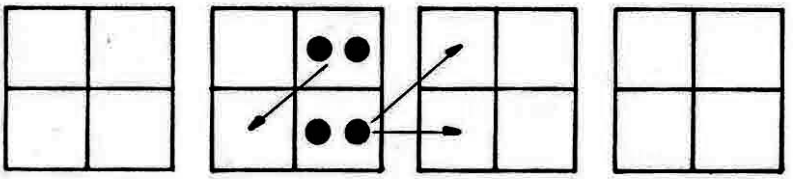
"Here I am with two checkers," says 1,000.

He jumps again and doubles the number of checkers.

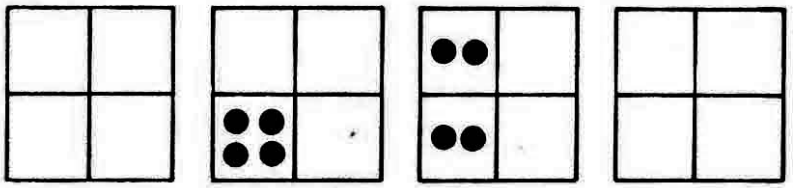


"This is fun! Now I'll try to double the number of checkers again."

He thinks before he jumps.

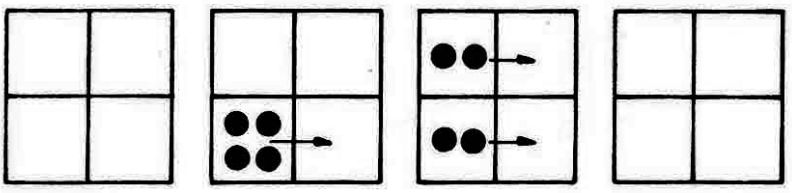


Then he jumps.

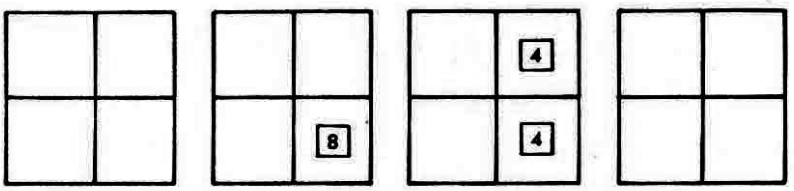


And once again!

He thinks.

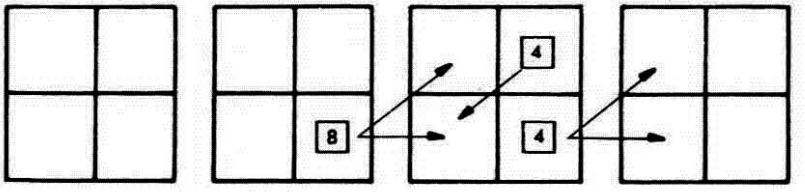


He jumps.

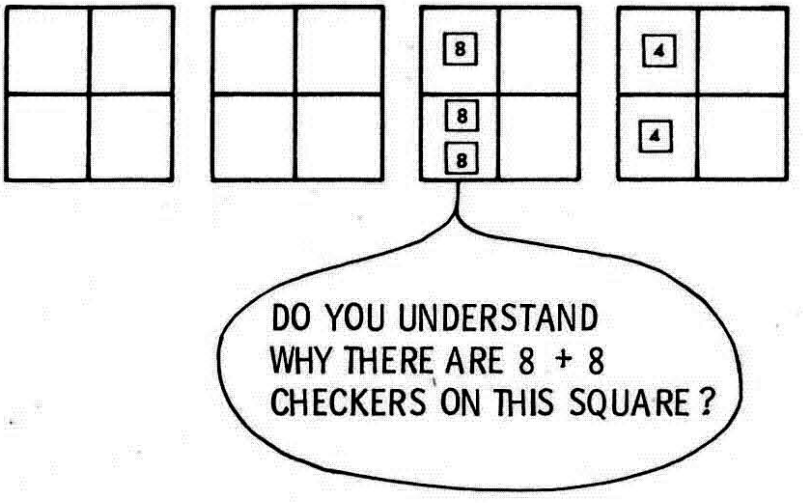


TAKE A PIECE OF PAPER AND DRAW THE RESULTS OF THE NEXT THREE JUMPS BEFORE YOU TURN THE PAGE.

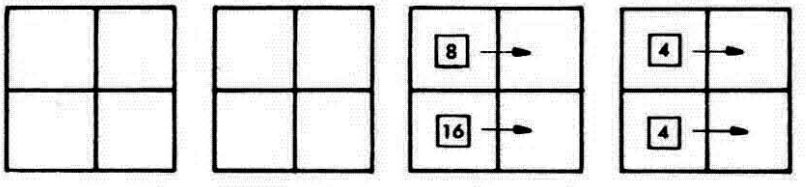
Watch carefully!



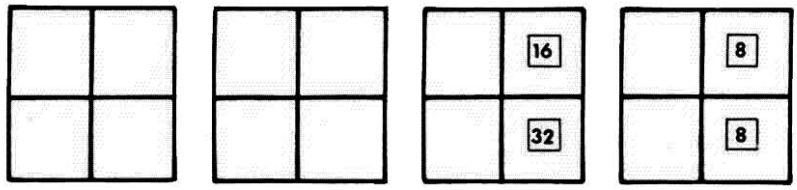
The first jump is not easy.



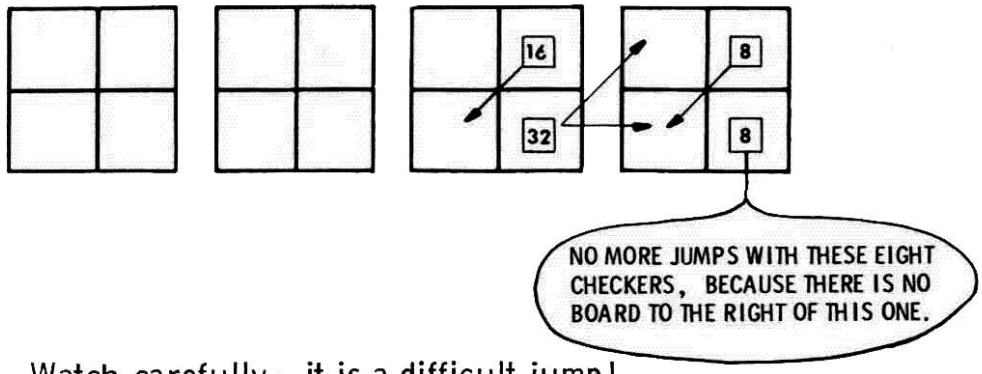
1,000 thinks again.



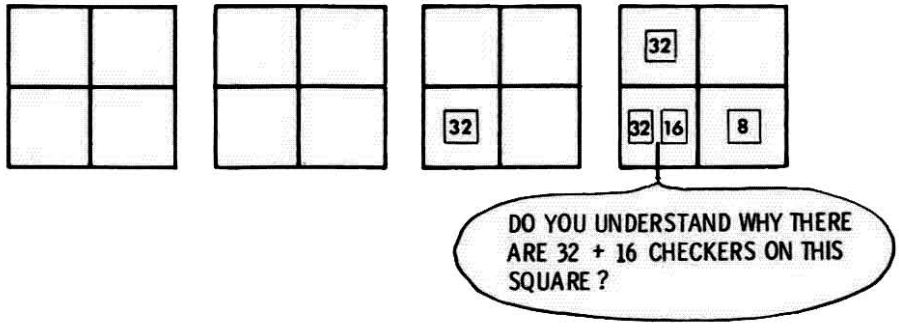
Then he jumps.



1,000 thinks.



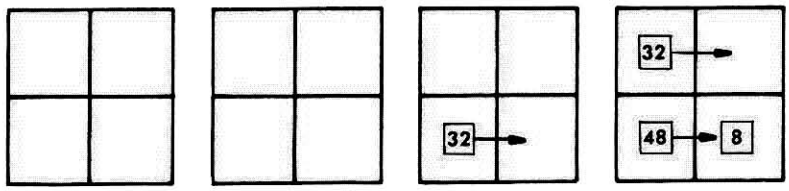
He jumps. Watch carefully; it is a difficult jump!



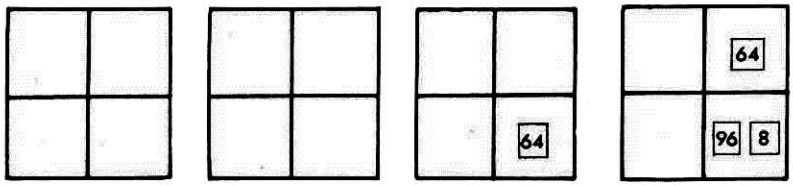
This time the number of checkers has not doubled.

DRAW THE RESULTS OF THE NEXT THREE JUMPS ON A SHEET OF PAPER BEFORE YOU TURN THE PAGE.

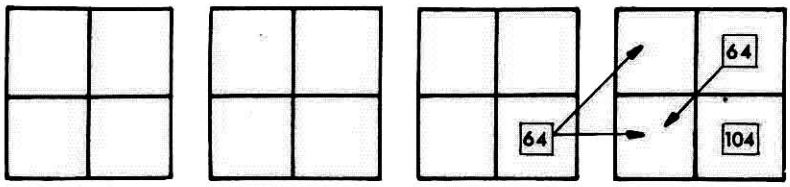
1,000 thinks again.



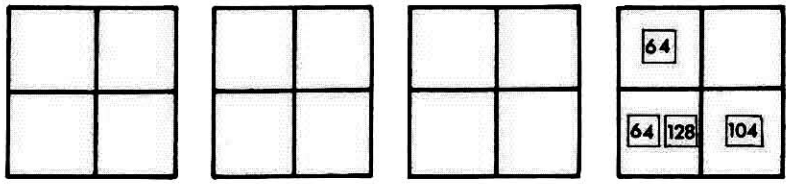
Then he jumps.



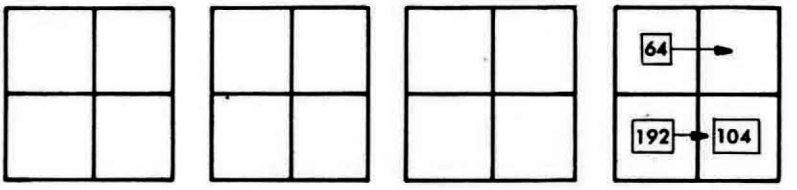
1,000 thinks.



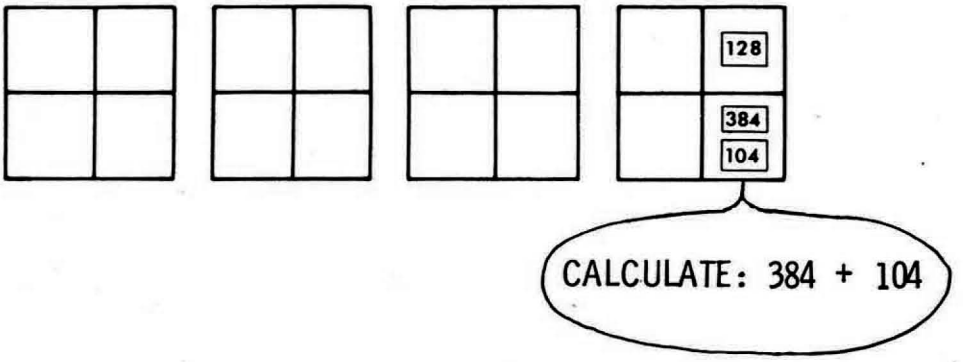
He jumps.

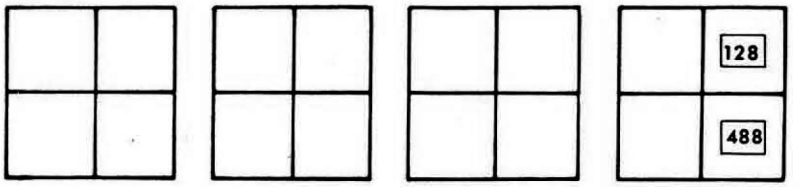


1,000 thinks.



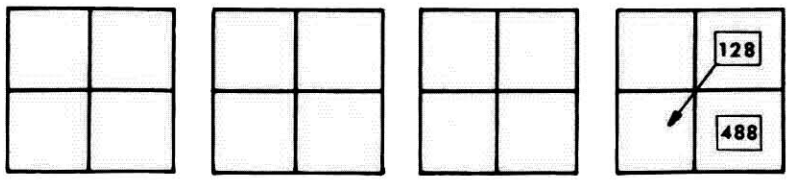
He jumps.



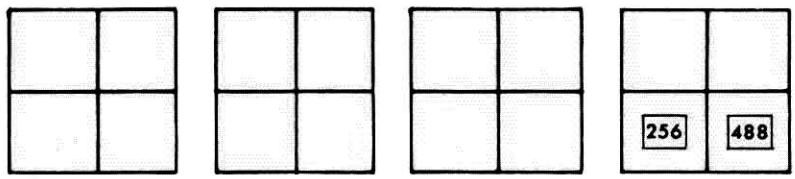


FINISH MAKING JUMPS BEFORE TURNING THE PAGE.

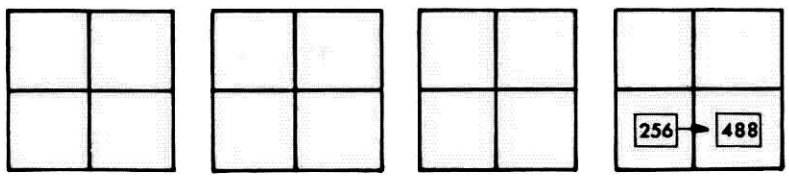
1,000 thinks.



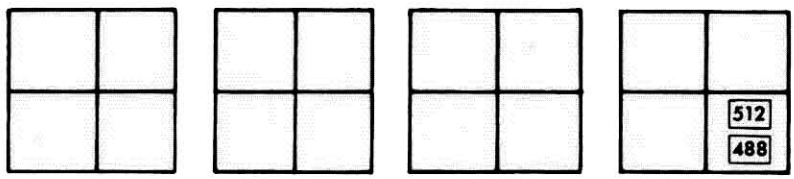
He jumps.



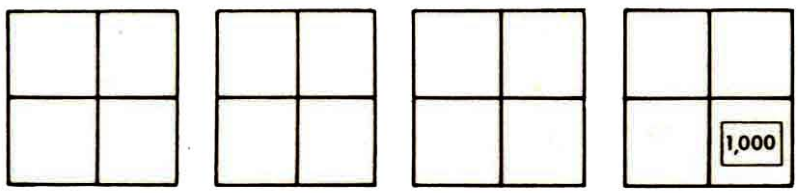
He thinks.



He jumps.



DID YOU GET THIS FINAL RESULT?

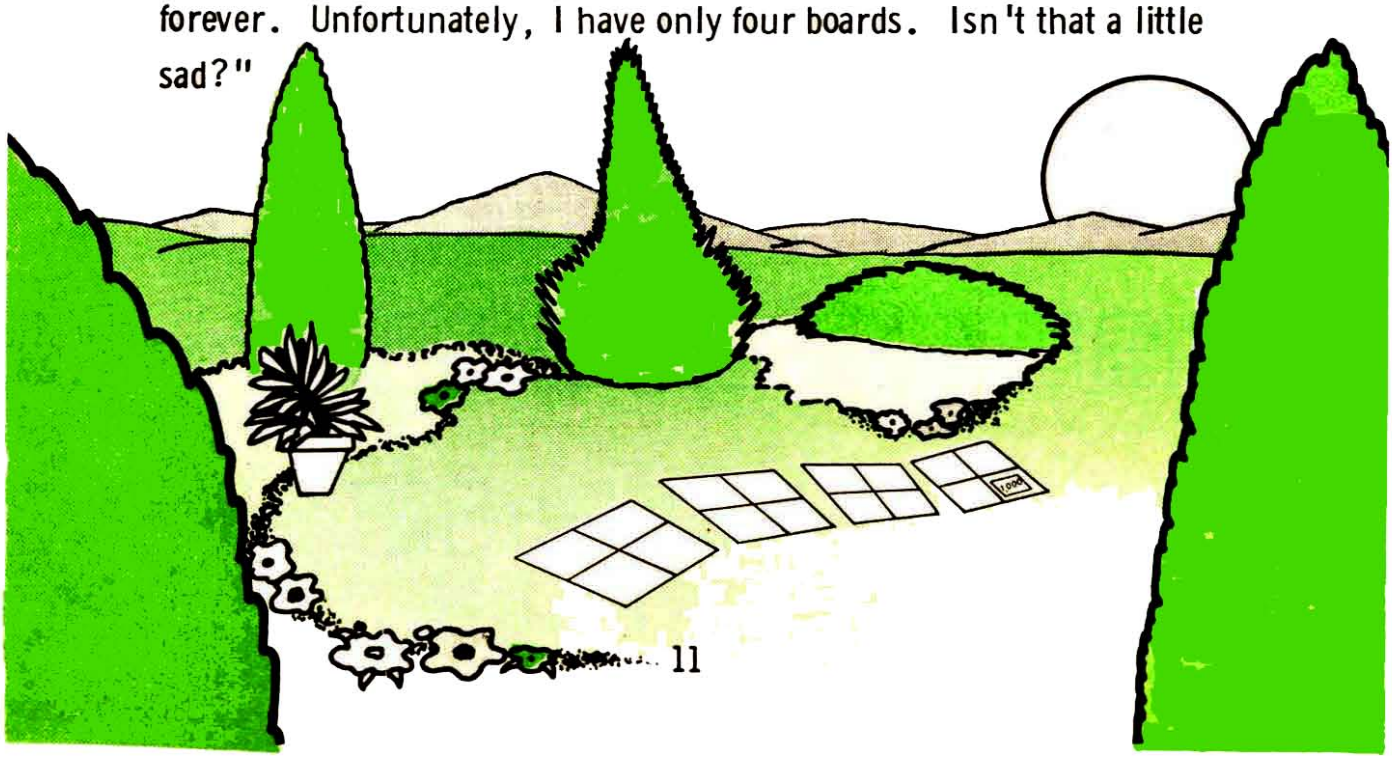


"My morning exercises are over," our friend says happily.

"There are exactly 1,000 checkers on the white square of the ones' board. That's correct because I am the number 1,000."

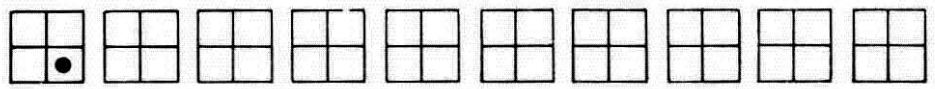
He is silent for a while.

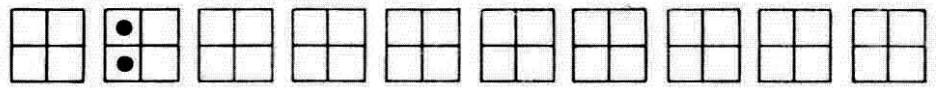
"I really enjoy jumping on my boards. I would like to go on doing it forever. Unfortunately, I have only four boards. Isn't that a little sad?"

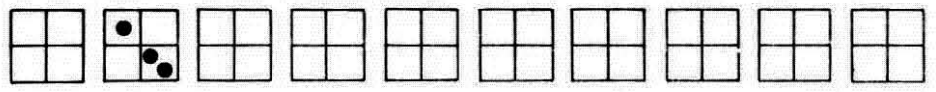


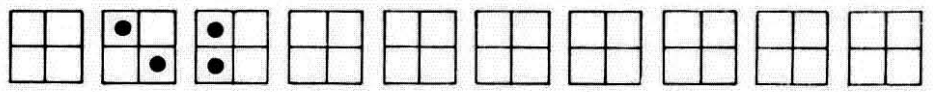
"Yesterday, I was playing with my friend 1,000,000,000," says 1,000. "He is a very lucky number because he has ten boards on which to move about. Look at the way he does his morning exercises."

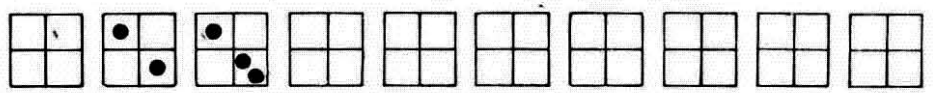
1,000 draws these pictures on the ground.

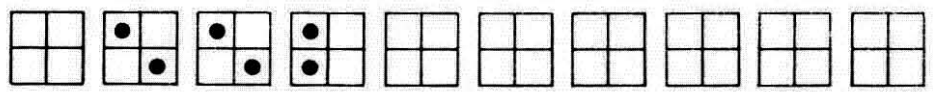
 = 1,000,000,000

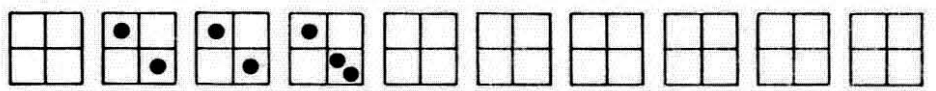
 = 1,000,000,000

 = 1,000,000,000

 = 1,000,000,000

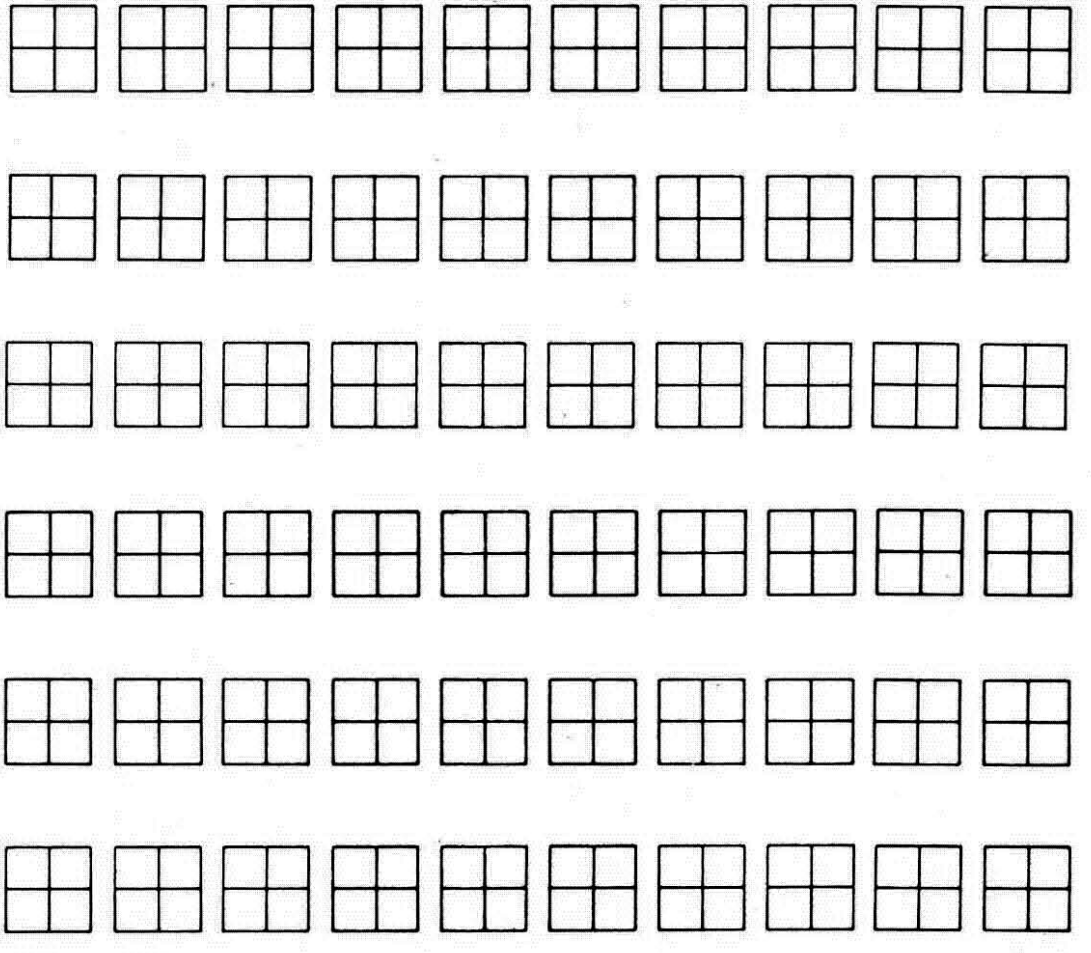
 = 1,000,000,000

 = 1,000,000,000

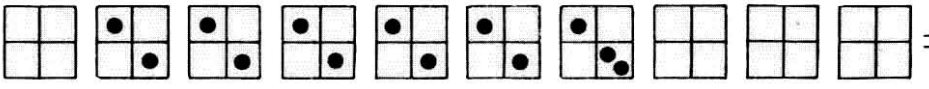
 = 1,000,000,000

"DO YOU UNDERSTAND MY FRIEND'S EXERCISES ? HE IS NOT JUMPING EXACTLY AS I DID, IS HE ? "

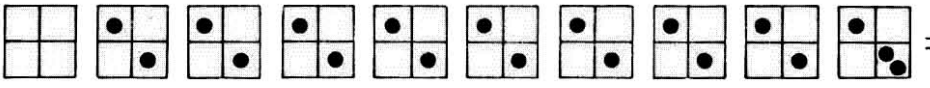
"CAN YOU DRAW THE RESULTS OF HIS NEXT SIX JUMPS?"



"I will draw the last picture for you."

 = 1,000,000,000

"But my friend hasn't finished his game yet," adds 1,000. "He keeps on jumping until he gets two checkers on the white square of the ones' board. Then, he rests on his Minicomputer boards like this."

 = 1,000,000,000

CAN YOU THINK OF SOME INTERESTING CALCULATIONS THAT THE MINI-COMPUTER SHOWS US? WRITE THEM BELOW.

1,000 writes:

$$1,000,000,000 = 999,999,999 + 1$$

He adds,

"I can write a similar calculation for myself."

$$1,000 = 999 + 1$$

DID YOU FIND ANY OTHER INTERESTING CALCULATIONS?

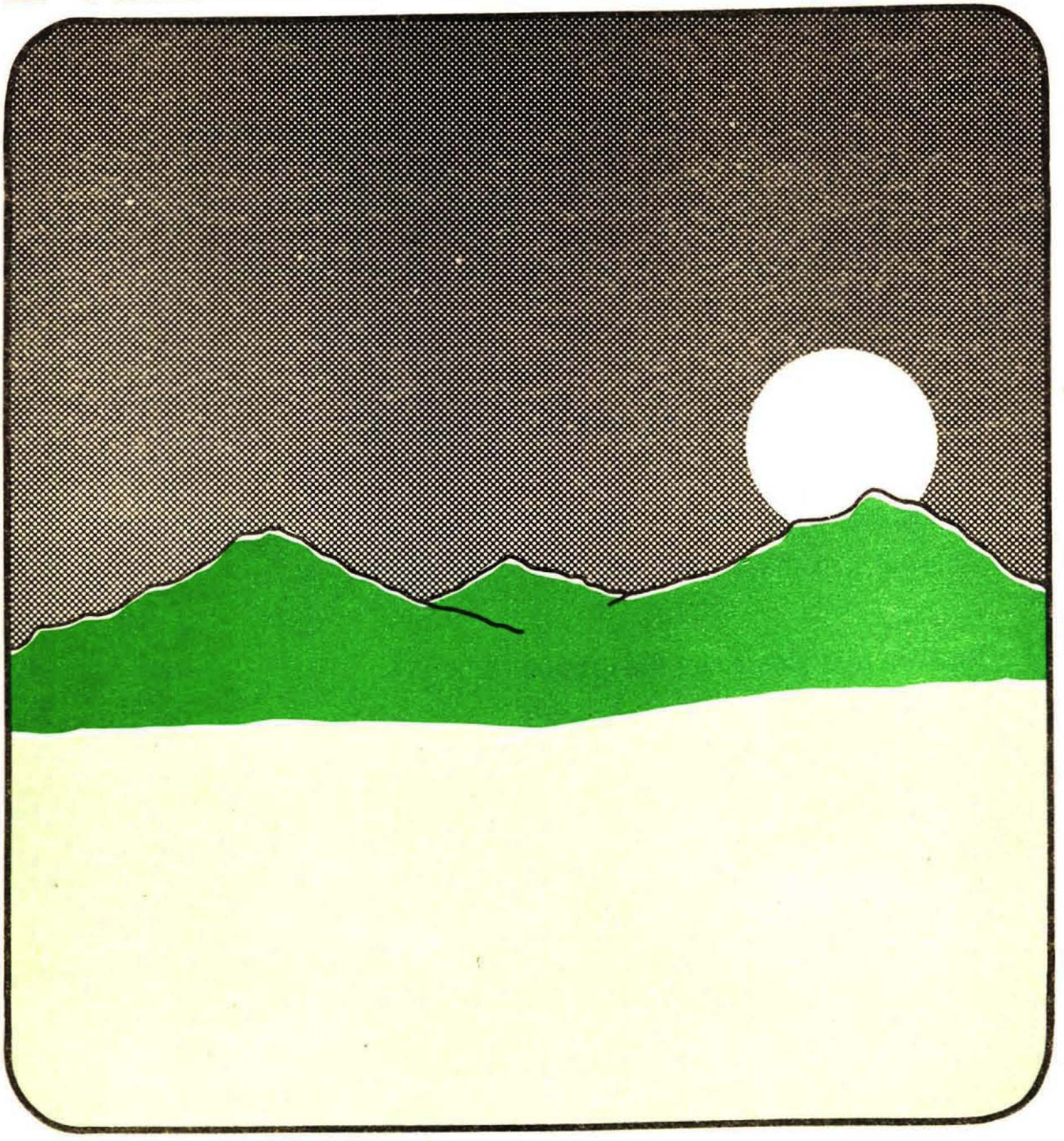
"I know some numbers who are even luckier than 1,000,000,000," says 1,000. "For instance, my friend 1,000,000,000,000 has thirteen boards on which to jump. Isn't that marvelous ?"

1,000 thinks for a while and writes :

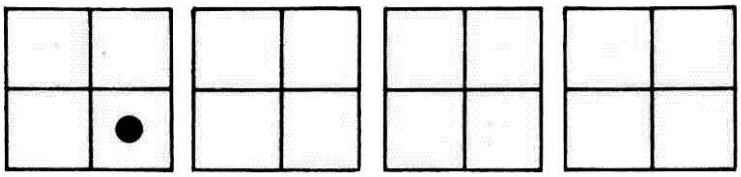
$$1,000,000,000,000 = 999,999,999,999 + 1$$

CAN YOU WRITE SIMILAR CALCULATIONS WITH EVEN LARGER NUMBERS ? DO IT BELOW.

NEXT NIGHT...



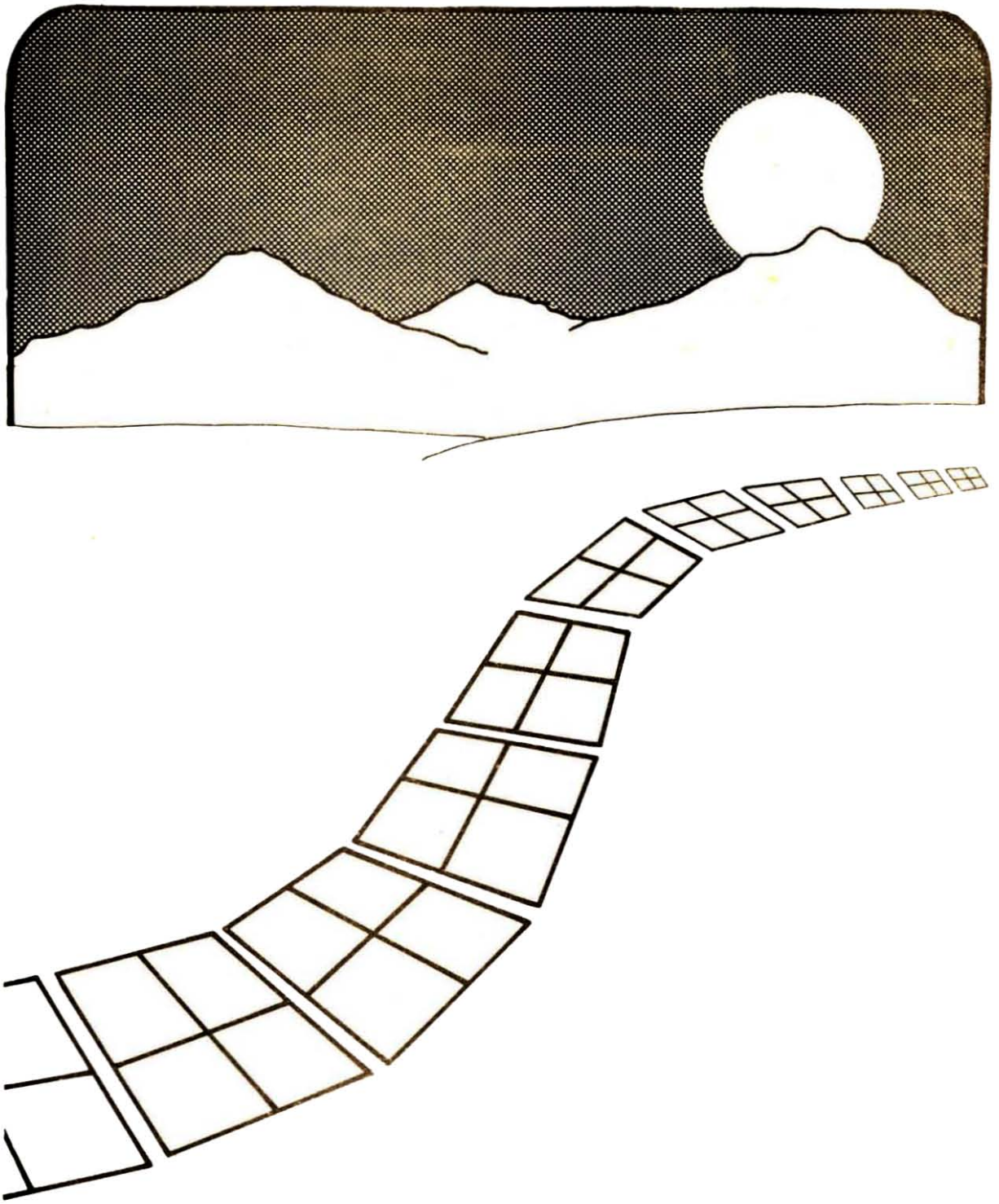
The next night, 1,000 was once again snoring as he slept on his Minicomputer boards.



Early in the morning, he woke up very excited.

"I had a strange dream," he mumbled to himself. "I was in a place where the road was paved with Minicomputer boards."

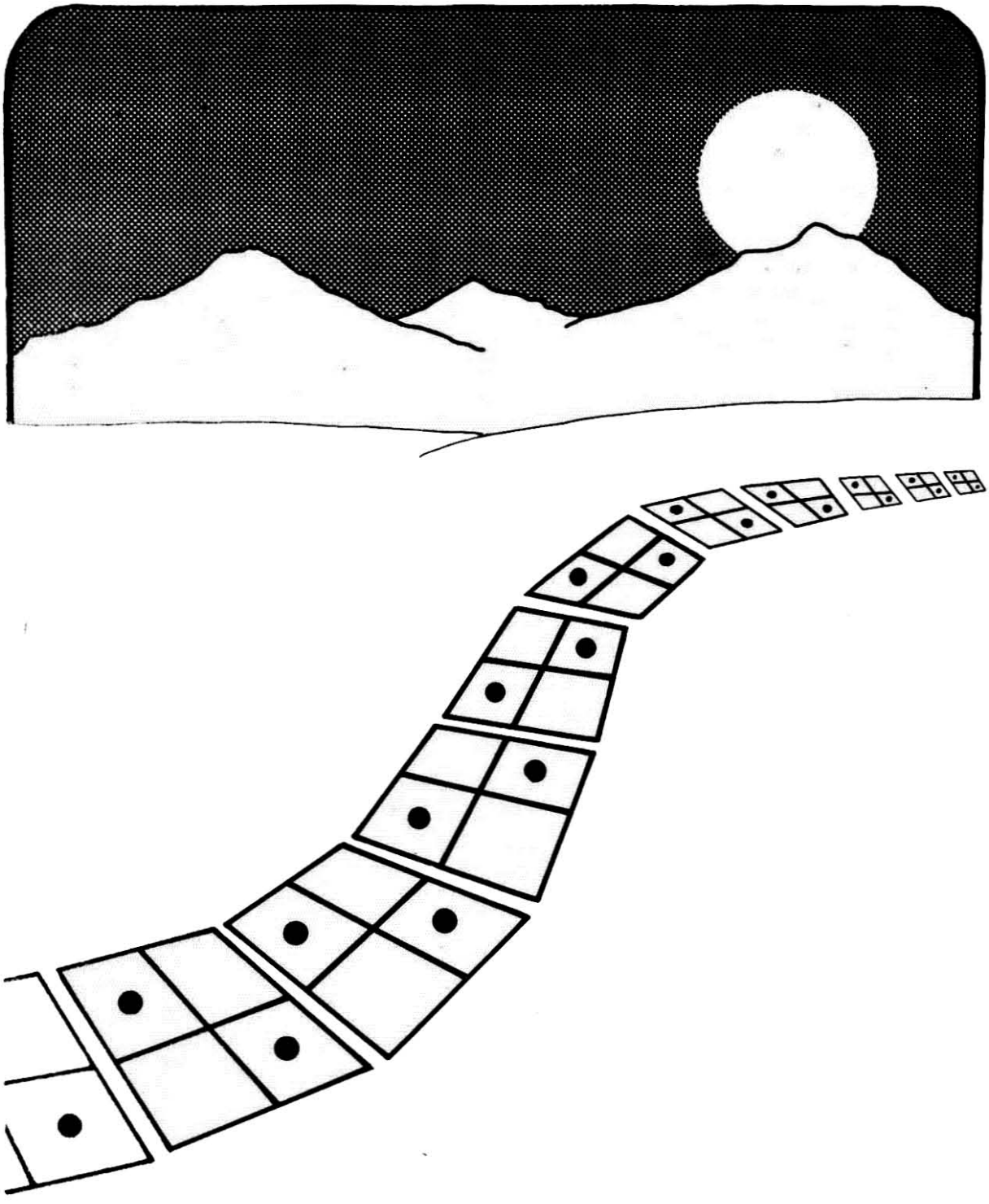
He drew this picture on the ground (page 19).



"I jumped on the road, from board to board, without stopping. I felt free and happy. The road was so long that I couldn't see the end of it."

He was silent for a while.

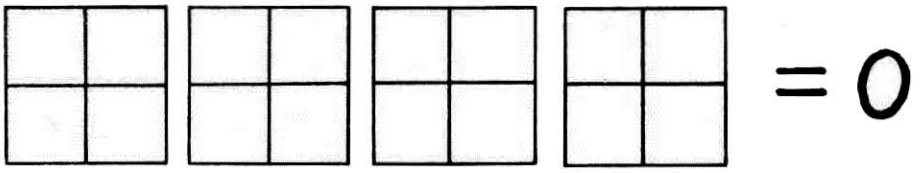
"But it was just a dream," he added sadly. "When I look at this marvelous picture (page 21), it's obvious that these numbers could not be me. I am not that large. I shall never know such freedom and happiness."



One hour later on his way to school, 1,000 met his friend 0 and told him about his dream.

0 is a very serious number. He listened to 1,000 thoughtfully. "Your dream is marvelous," he said. "I can very well understand how you want to jump on many more boards."

"For me the situation is even worse. I can never jump. I have to sit quietly on the Minicomputer without any checkers."

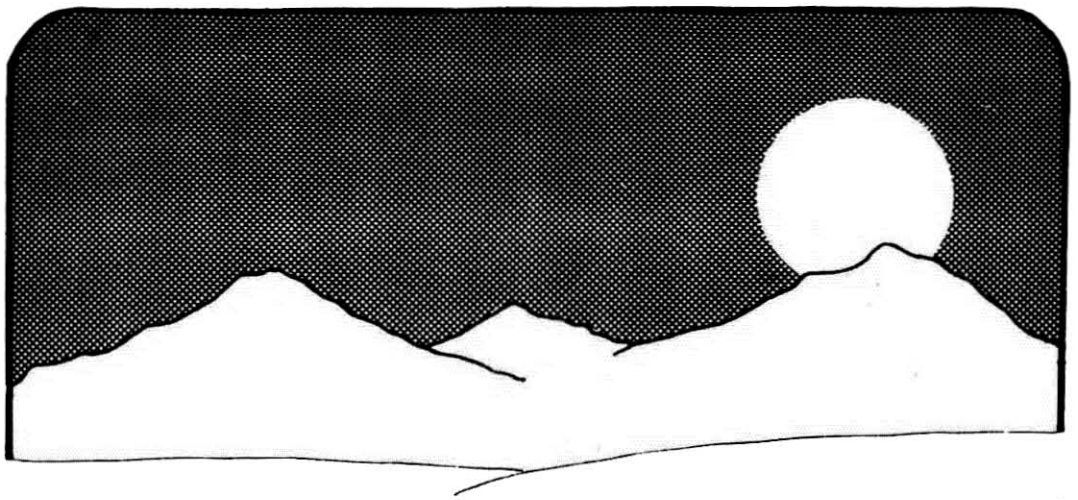


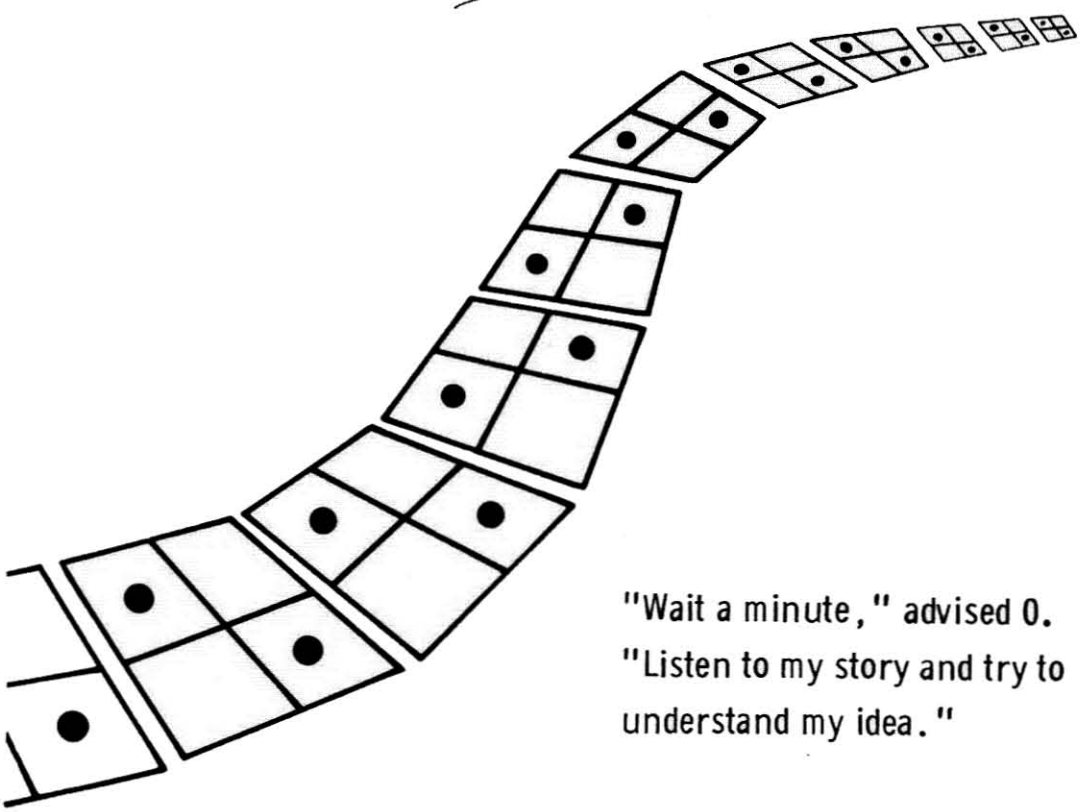
Suddenly, he smiled.

"I think that your dream could come true," he said.

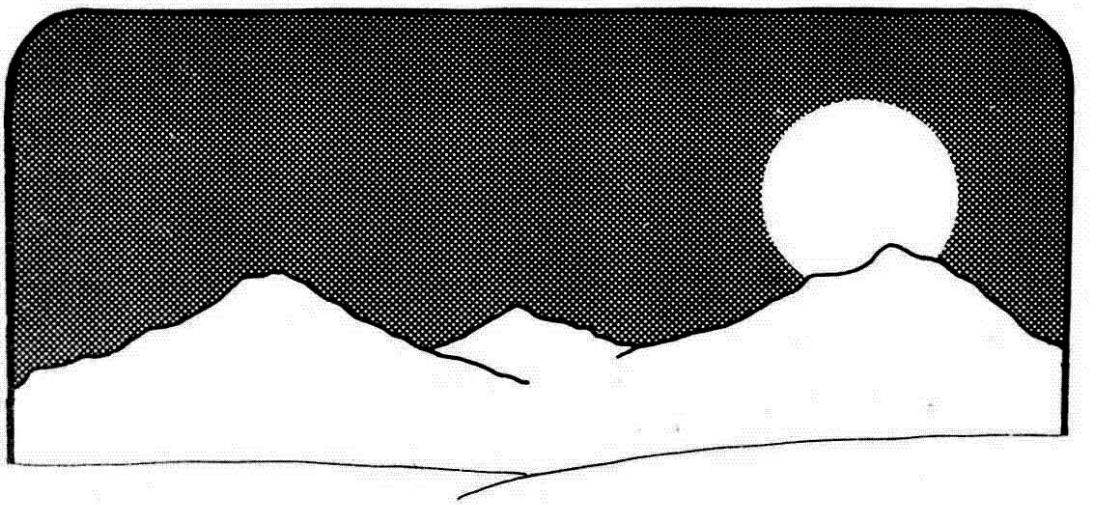
1,000 looked very surprised.

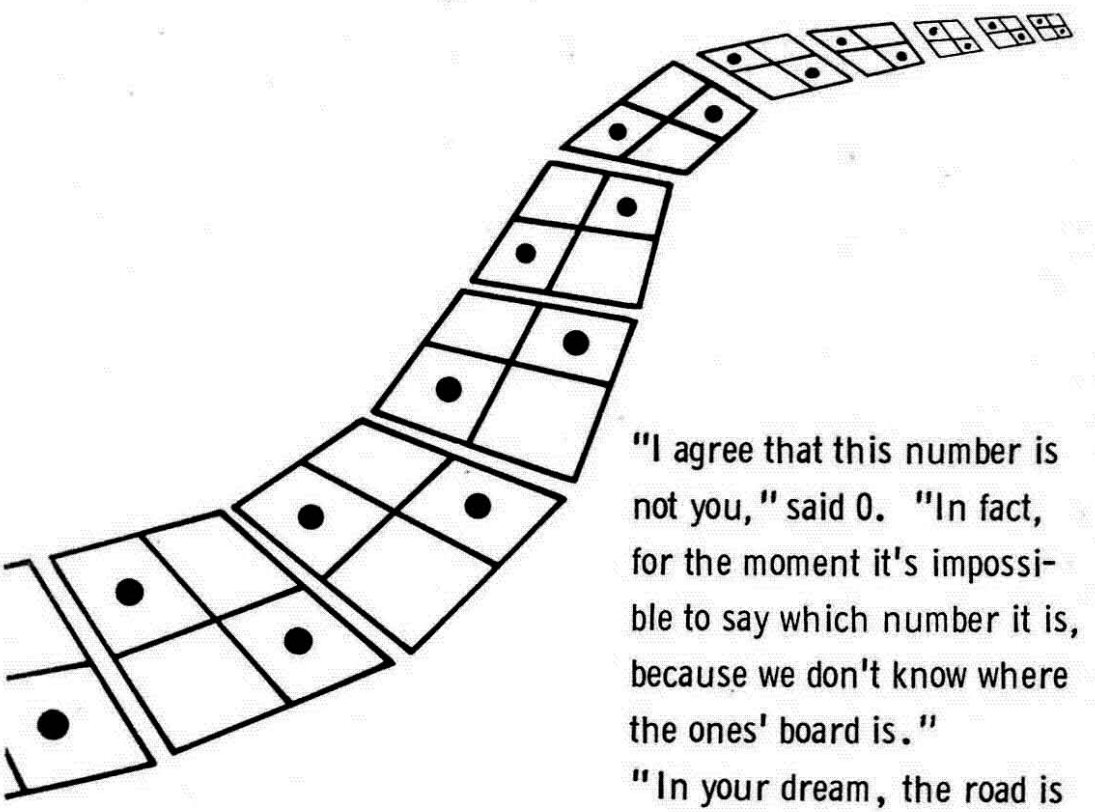
"You are making fun of me. My dream doesn't make sense. I shall never be like this number who has so many digits. He is much larger than I am."





"Wait a minute," advised 0. "Listen to my story and try to understand my idea."

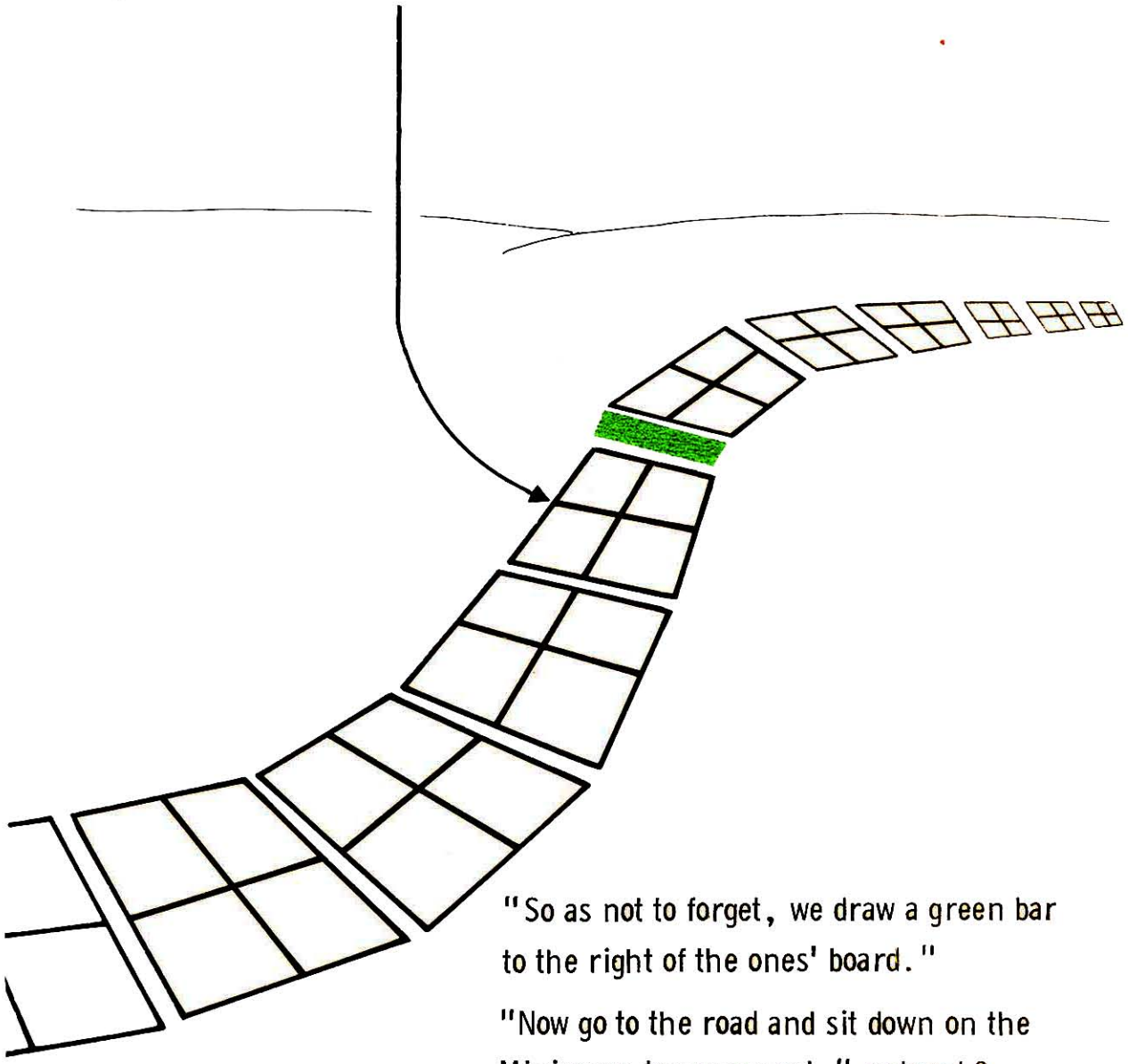




"I agree that this number is not you," said 0. "In fact, for the moment it's impossible to say which number it is, because we don't know where the ones' board is."

"In your dream, the road is so long that we cannot see where it begins or where it ends."

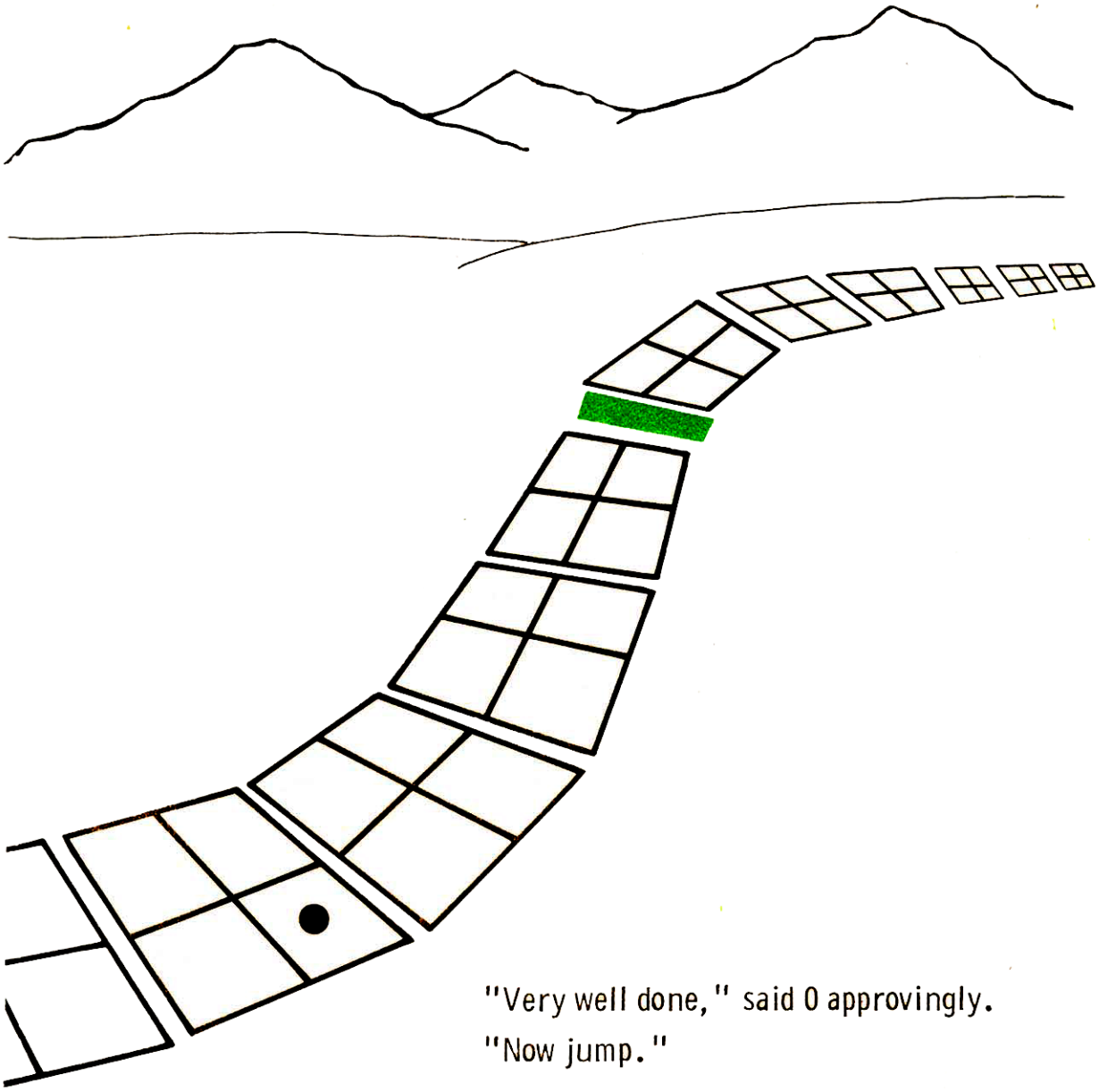
"But, let us decide that this board is the ones' board."



"So as not to forget, we draw a green bar to the right of the ones' board."

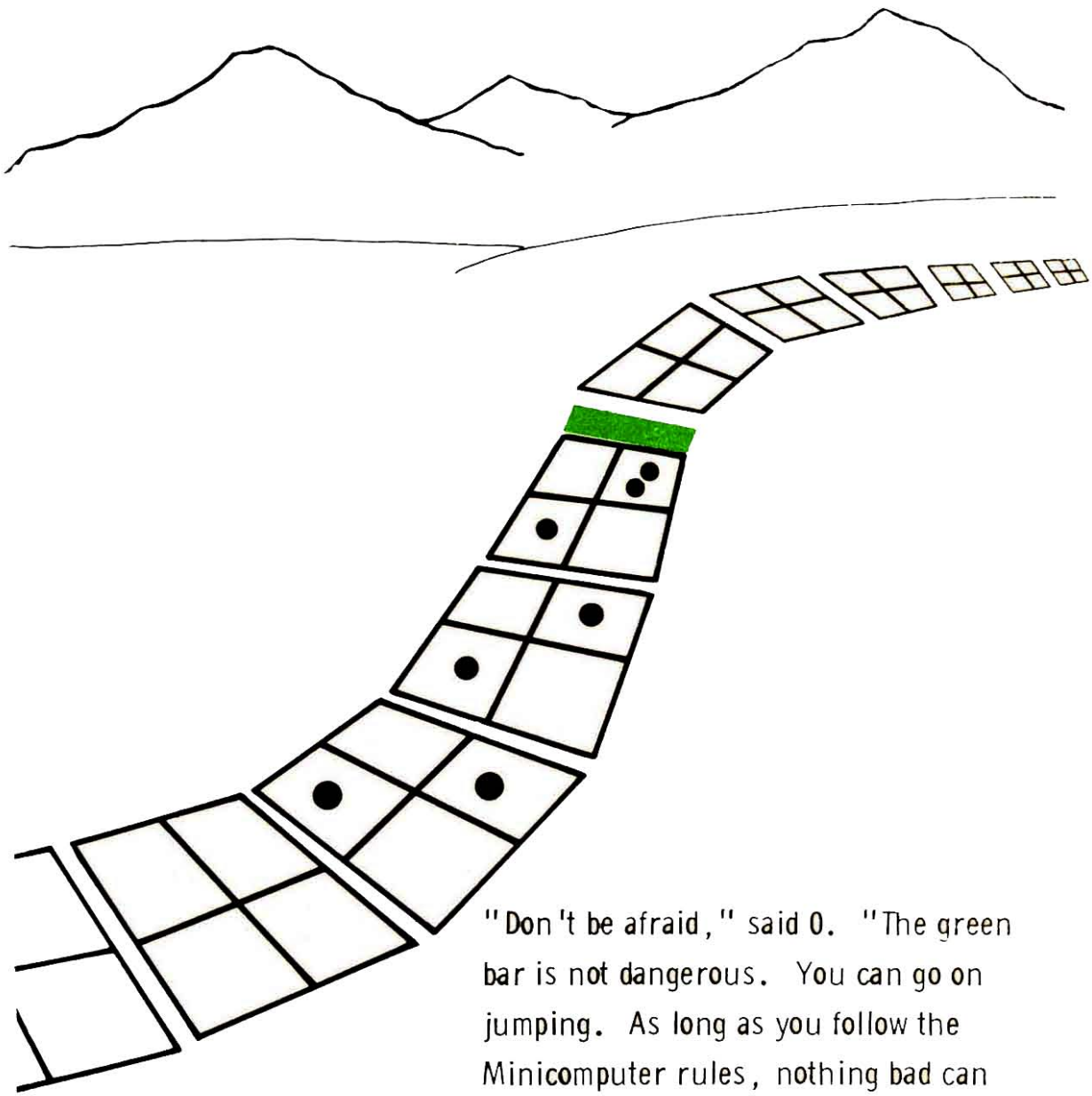
"Now go to the road and sit down on the Minicomputer pavement," ordered 0.

1,000 obeyed.



"Very well done," said 0 approvingly. "Now jump."

1,000 obeyed again and stopped after six jumps (page 27).

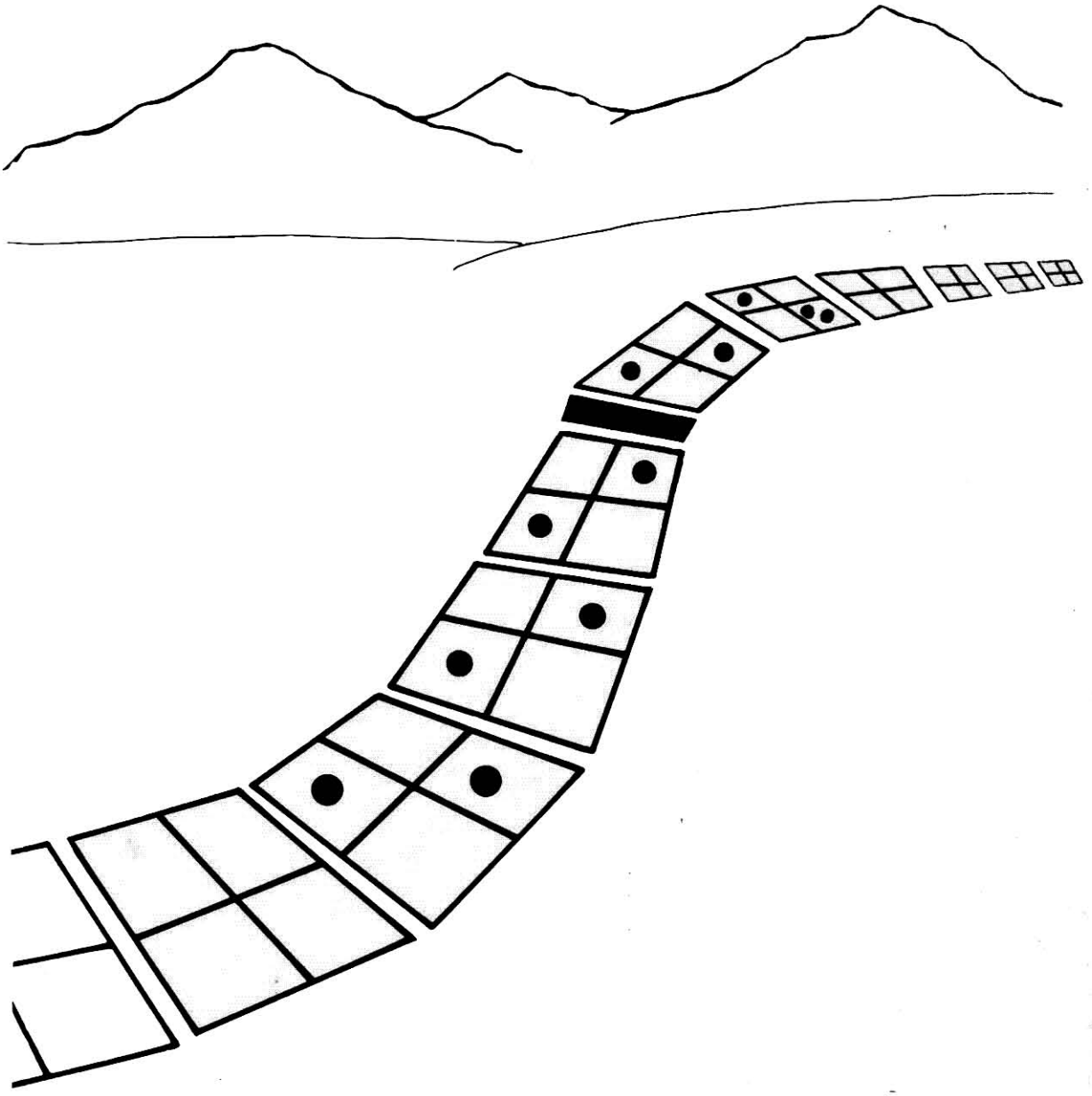


"Don't be afraid," said 0. "The green bar is not dangerous. You can go on jumping. As long as you follow the Minicomputer rules, nothing bad can happen to you. You will not lose your identity."

1,000 listened carefully.

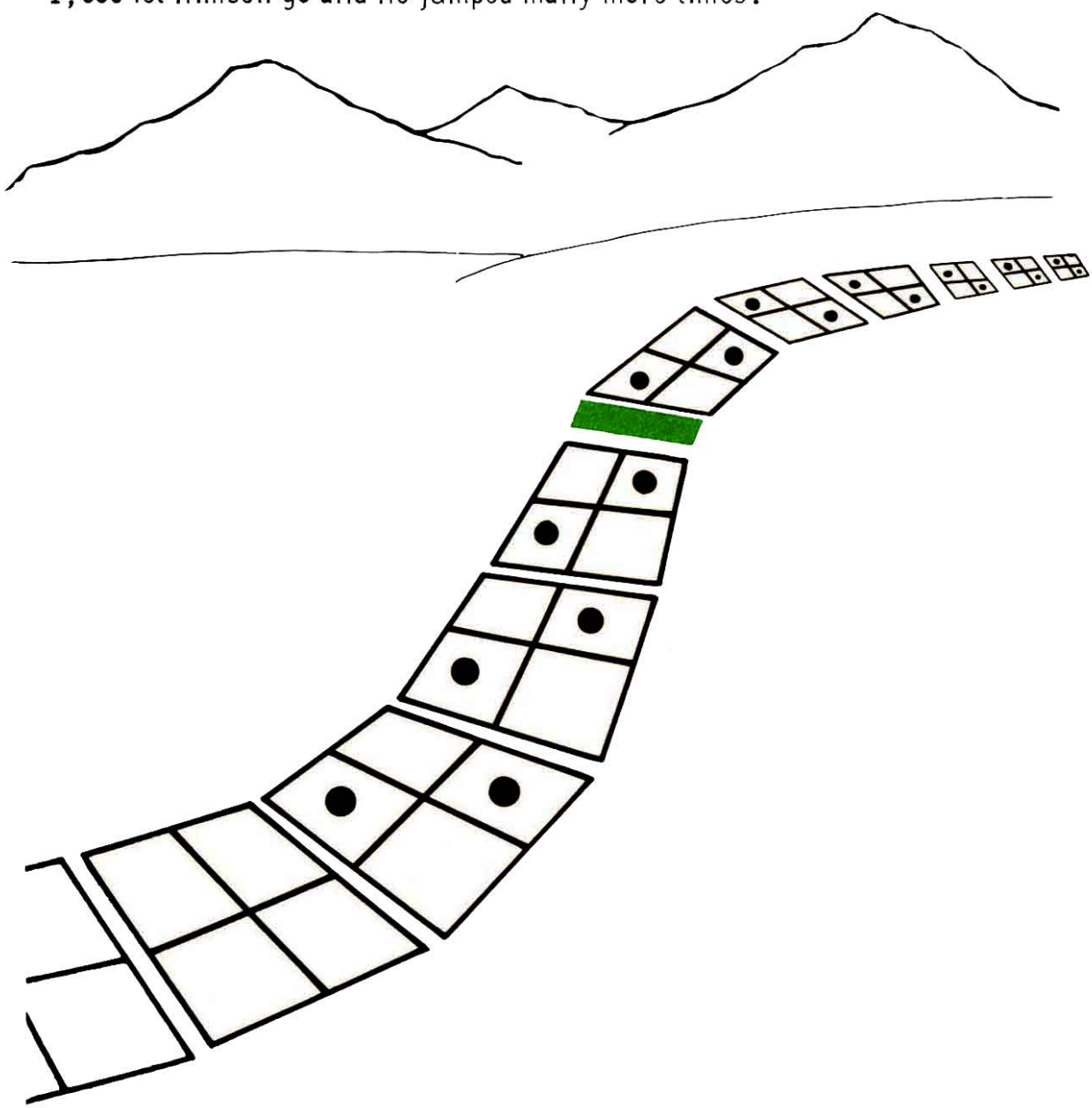
"Jump again," ordered 0.

A little afraid, 1,000 obeyed but stopped after four more jumps.



"Go on," said O. "I am here. I am your friend. No harm will come to you."

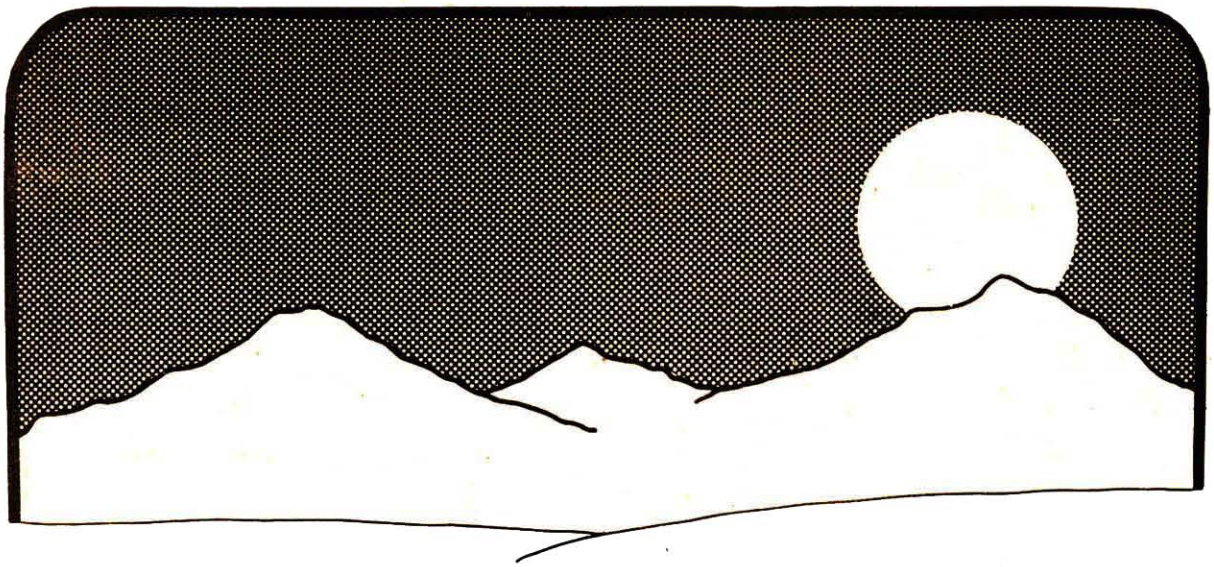
1,000 let himself go and he jumped many more times.

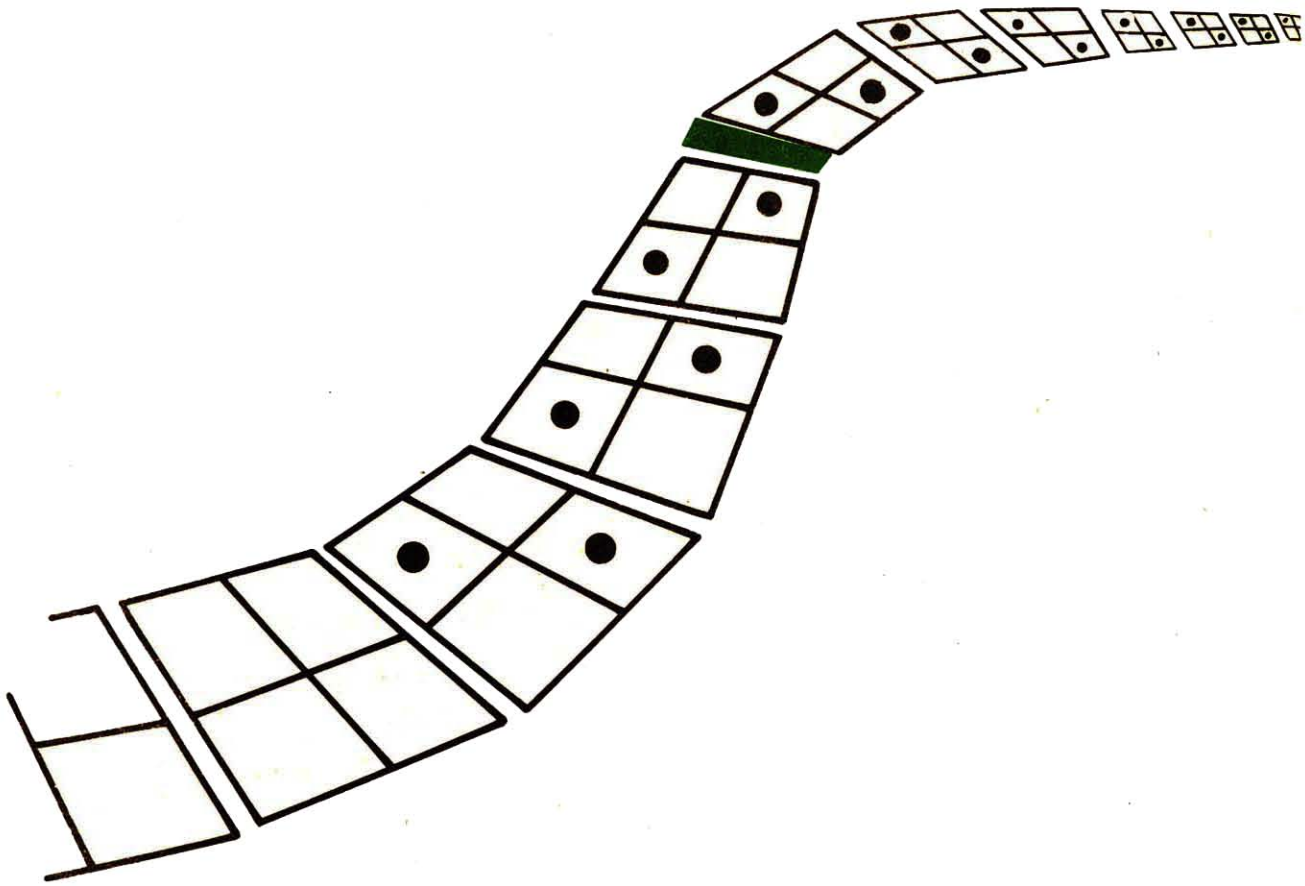


"I feel as free and happy as I did in my dream," sang 1,000.

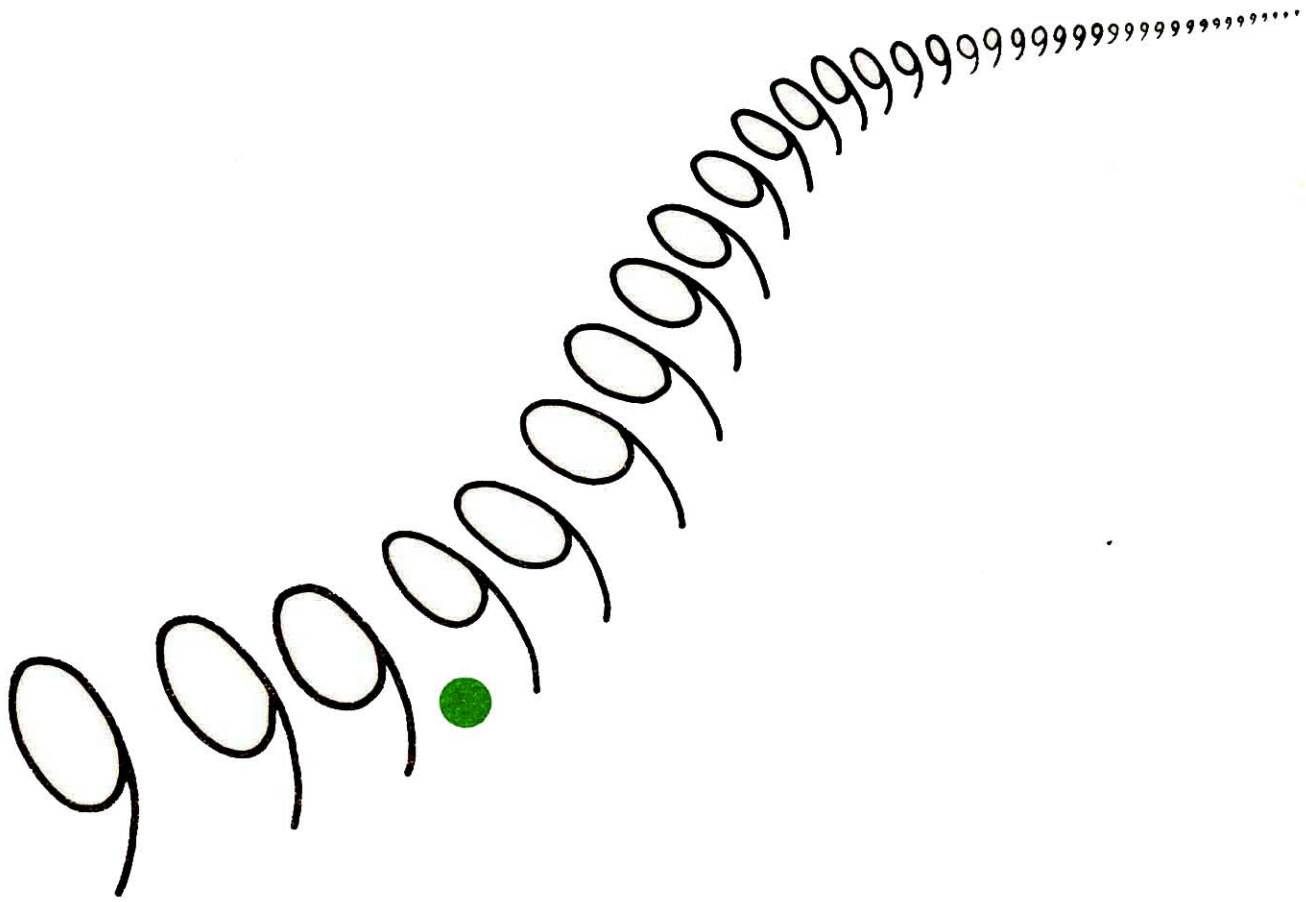
"You should take a little rest," advised 0.

But 1,000 was too excited. He jumped more and more quickly.





"Isn't this marvelous," said 1,000. "Now I understand that I can go on jumping forever. There is no last board on the right to stop me. I feel like a bird in an infinite sky."

0 looked at him tenderly. "I am happy for you."

This is the end of the story of the number 1,000 who is happy to be able to sign your book in this way.