

7. 数学王子

zhù míng shù xué jiā gāo sī chū shēng zài yí gè pín kùn de nóng cūn jiā tíng tā zài shù
著名数学家高斯出生在一个贫困的农村家庭。他在数
xué fāng miàn jí jù tiān fù sān suì jiù kě yǐ jiū zhèng fù qīn zhàng běn de cuò wù shí
学方面极具天赋，三岁就可以纠正父亲账本的错误，实
zài liǎo bù qǐ dāng shí cóng chéng lí lái de shù xué lǎo shī zǒng jué dé xiāng cūn de hái zǐ
在了不起！当时从城里来的数学老师，总觉得乡村的孩子
bù rú chéng shì lǐ de hái zǐ cōng míng líng lì
不如城市里的孩子聪明伶俐，
shù xué jī chǔ yě bù hǎo
数学基础也不好。

yí tiān wèi le xùn liàn xué shēng zuò
一天，为了训练学生做
jiā fǎ de néng lì lǎo shī gěi xué shēng men
加法的能力，老师给学生
chū liàn xí tí shí shuō nǐ men suàn yí suàn
出练习题时说：“你们算一算
jiā jiā yì zhí jiā dào
1加2加3……一直加到100
děng yú duō shǎo xué shēng men tīng le
等于多少？”学生们听了，
biàn ná chū bǐ hé zhǐ kāi shǐ jì suàn
便拿出笔和纸开始计算。

bú yì huì er xiǎo gāo sī jǔ qǐ shǒu shuō lǎo shī wǒ suàn chū lái le ...
不一会儿，小高斯举起手说：“老师，我算出来了...”
hái méi děng xiǎo gāo sī shuō wán lǎo shī lián zhǐ zhāng yě méi kàn yí yǎ jiù shuō
还没等小高斯说完，老师连纸张也没看一眼，就说：
cuò le chóng xīn zài suàn
“错了，重新再算！”



Prince of Math.

The famous mathematician Gauss was born in a poor rural family. He was very talented in mathematics, and he can correct the mistakes in his father's ledger at the age of three, it was amazing! At that time, the math teacher who came from the city always felt that the children in the countryside were not as smart as the children in the city, and their math foundation were not good as well.

One day, to train the students' ability to do addition, the teacher gave the students an exercise and said: "You count, 1 plus 2 plus 3... until 100, what is the answer?" After hearing this, the students took out pen and paper and started counting.

After a short while, little Gauss raised his hand and said, "Teacher, I got the answer..."

Before little Gauss finished speaking, the teacher didn't even glance at the paper, and said: "It's wrong, calculate again!"

xiǎo gāo sī mǐn jié de bǎ suàn shì chóng xīn jiǎn chá le yí biàn gāo shēng shuō lǎo
小高斯敏捷地把算式重新检查了一遍，高声说：“老
shī wǒ méi yǒu suàn cuò shuō wán biàn zǒu chū zuò wèi bǎ zhǐ zhāng shēn dào le lǎo
师，我没有算错！”说完便走出座位，把纸张伸到了老
shī de miàn qián yuán běn bú yuàn bèi dǎ jiǎo de lǎo shī dī tóu yí kàn zhǐ jiàn shàng miàn
师的面前。原本不愿被打搅的老师低头一看，只见上面
duān duān zhèng zhèng de xiě zhe wǔ qiān líng wǔ shí tā bù jīn dà chī yí jīng
端端正正地写着“五千零五十”，他不禁大吃一惊。

tā jiǎn zhí bù gǎn xiāng xìn zhè zhǒng fù zá de yùn suàn tí yí gè xiǎo xué èr
他简直不敢相信，这种复杂的运算题，一个小学二
nián jí de xué shēng jìng rán néng xùn sù de dé chū zhèng què dá àn yú shì tā
年级的学生，竟然能迅速地得出正确答案。于是，他
wèn xiǎo gāo sī nǐ shì zěn me suàn chū lái de
问小高斯：“你是怎么算出来的？”

xiǎo gāo sī huí dá shuō wǒ bú shì àn zhào 1 jiā 2 jiā 3 de cì xù
小高斯回答说：“我不是按照1加2加3……的次序
yí gè yí gè wǎng shàng jiā de lǎo shī nín kàn yí tóu yí wěi de liǎng gè shù de
一个一个往上加的。老师，您看，一头一尾的两个数的
hé dōu shì yí yàng de 1 jiā 100 shì 101 , 2 jiā 9 shì 101 , 3 jiā
和，都是一样的。1加100是101，2加9是101，3加
yě shì 98 yě shì 101 bǎ yí qián yí hòu de shù xiāng jiā yí gòng yǒu 50 gè 101 。
98也是101……把一前一后的数相加一共有50个101。
zuì hòu 101 chéng yǐ 50 jiù dé chū 5050 。”
最后，101乘以50，就得出5050。”

Little Gauss quickly checked the **formula** again, and said loudly: "Teacher, I did not make any mistake!" After speaking, he walked out of his seat and stretched out the paper in front of the teacher. The teacher, who didn't want **to be disturbed** at first, looked down and saw "five thousand and fifty" written on it, and he couldn't help being **surprised**.

He couldn't believe that such a **complicated** calculation, could be solved so quickly by a student in the second grade of elementary school. So he asked little Gauss: "How did you figure it out?"

Little Gauss replied: "I didn't add one by one in the order of 1 plus 2 plus 3... Teacher, look, the sum of the two numbers at the beginning and the end is the same. 1 plus 100 is 101, 2 plus 9 is 101, 3 plus 98 is also 101... Adding the numbers one after the other has a total of 50 pairs of 101s. Finally, I multiplied 101 by 50 to get 5050."

tīng le xiǎo gāo sī de huí dá lǎo shī gǎn dào dà wéi zhèn jīng yīn wéi zhè shì tā
听了小高斯的回答，老师感到大为震惊，因为这是他
dì yī cì zhī dào zhè dào shù xué tí yǒu zhè yàng de yí gè jì suàn fāng fǎ tā jīng
第一次知道，这道数学题有这样的一个计算方法。他惊
xǐ de kàn zhe zhè ge chuān dé pò làn bù kān de xué shēng
喜地看着这个穿得破烂不堪的学生。

zhè shì shuí jiā hái zǐ ā zhēn cōng míng
“这是谁家孩子啊？真聪明！”

ài cái de lǎo shī jué dìng duì xiǎo gāo sī jìn xíng zhuān mén de zāi péi tè yì cóng
爱才的老师决定对小高斯进行专门的栽培，特意从
dà chéng shì mǎi le yì běn zuì hǎo de suàn shù shū sòng gěi xiǎo gāo sī yǐ mǎn zú xiǎo gāo
大城市买了一本最好的算术书送给小高斯，以满足小高
sī de qiú zhī yù wàng
斯的求知欲望。

xiǎo gāo sī xiǎo xué bì yè hòu lǎo shī hái lián luò dāng dì de rén lái dāng tā de zàn zhù
小高斯小学毕业后，老师还联络当地的人来当他的赞助
rén ràng tā huò dé miǎn fèi de zhōng xué jiào yù cǐ hòu gèng shùn lì jìn rù dà xué shēn
人，让他获得免费的中学教育，此后更顺利进入大学深
zào
造。

After hearing Gauss's answer, the teacher was shocked, because this was the first time he knew that this math problem can be calculated this way. He looked with surprise at the shabbily dressed student.

"Whose child is this? You are so smart!"

The teacher appreciated his talent and decided to train the little Gauss, he and bought the best arithmetic books from the big city for the little Gauss, to satisfy the little Gauss' thirst for knowledge.

After Little Gauss graduated from elementary school, the teacher even contacted the locals to be his sponsors, allowing him to obtain free middle school education. Gauss even entered university to further his studies.



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dà xué de jiào shòuchángcháng gěi gāo sī chū shù xué tí zhè tiān yǒu diǎn qí guài
大学的教授常常给高斯出数学题。这天有点奇怪，

yǐ qián jiào shòu měi tiān zǒng shì gěi gāo sī sān dào tí jīn tiān què pò lì gěi le sì dào tí
以前教授每天总是给高斯三道题，今天却破例给了四道题。

qián sān tí gāo sī zài liǎng gè xiǎo shí nèi jiù shùn lì wán chéng le kě shì dì sì tí yāo
前三题高斯在两个小时内就顺利完成了。可是，第四题要

qiú zhǐ yòng yuán guī hé yī bǎ méi yǒu kè dù de zhí chǐ huà chū yí gè zhèng shí qī biān xíng
求只用圆规和一把没有刻度的直尺画出一个正十七边形，

tā jiǎo jìn nǎo zhī yě méi yǒu huà chū lái
他绞尽脑汁也没有画出来。

shí jiān yī fēn yī miǎo de guò qù yǐ jīng shì líng chén liǎng diǎn le dì sì tí
时间一分一秒地过去，已经是凌晨两点了，第四题

réng rán háo wú jìn zhǎn tā fā xiàn zì jǐ xué guò de suǒ yǒu shù xué zhī shì sì
仍然毫无进展。他发现，自己学过的所有数学知识，似

hū duì jiě kāi zhè dào tí yí diǎn bāng zhù yě méi yǒu rán ér zhè yàng de cuò bài fǎn
乎对解开这道题一点帮助也没有。然而，这样的挫败反

ér jī qǐ le gāo sī de dòu zhì suǒ xìng chè yè bù mián yí dìng yào bǎ tā huà chū
而激起了高斯的斗志：索性彻夜不眠，一定要把它画出

来！

dāng chuāng kǒu lù chū shǔ guāng gāo sī cháng shū le yí kǒu qì tā zhōng yú àn yāo
当窗口露出曙光，高斯长舒了一口气，他终于按要

qiú huà chū le yí gè piào liang de zhèng shí qī biān xíng
求画出了一个漂亮的正十七边形！

The university professor often gave Gauss math problems. This day is unusual; in the past, the professor always gives Gauss three questions every day, but today he **made an exception** and gave him four. Gauss successfully completed the first three questions within two hours. However, in the fourth question he was asked to draw a regular heptagon with only a **compass** and a ruler without scale. He **cracked his head** and failed to draw it.

Time passed by, it was already two o'clock in the morning, and there was still **no progress** on the fourth question. He found that all the mathematics knowledge he had learned didn't seem to help solve this problem at all. However, such a **setback** ignited Gauss' fighting spirit: he simply stayed up all night and determined to complete it!

The light appeared in the window, Gauss **heaved a sigh of relief** when he finally drew a beautiful regular heptagon as required!

Additional note: compass here refers to the geometric tool for drawing circle (in Malay – Jangka Lukis), not the compass for direction.

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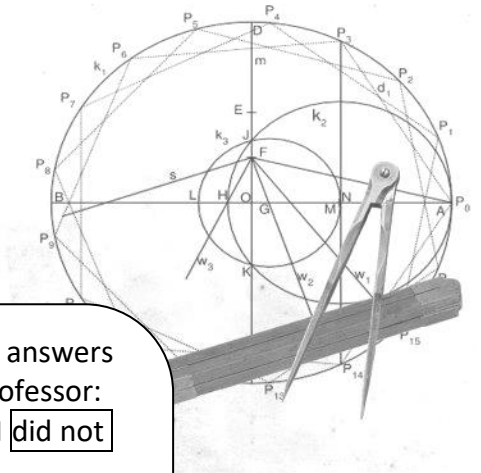


zǎo chén gāo sī dài zhe zhè sì dào shù xué tí de dá àn qù jiàn jiào shòu tā nèi
早晨，高斯带着这四道数学题的答案去见教授。他内
jiù de duì jiào shòu shuō nín gěi wǒ chū de dì sì tí wǒ jìng rán zuò le zhěng gè tōng
疚地对教授说：“您给我出的第四题，我竟然做了整个通
xiāo wǒ gū fù le nín duì wǒ de qī wàng”
宵。我辜负了您对您的期望.....”

jiào shòu jiē guò gāo sī de zuò yè yí kà yòng chàn dǒu de shēng yīn wèn gāo sī
教授接过高斯的作业一看，用颤抖的声音问高斯：
zhè zhēn de shì nǐ zì jǐ zuò chū lái de ma nǐ zuò le duō shǎo cì ya
“这真的是你自己做出来的吗？你做了多少次呀？”

gāo sī yǒu xiē yí huò de kàn zhe jiào shòu huí dá dào shì wǒ huà le zhěng
高斯有些疑惑地看着教授，回答：“我画了整个
zhěng yí gè tōng xiāo zuò de zuò le wú shù cì !”
整个通宵做的，做了无数次！”

jiào shòu qǔ chū yuán guī hé zhí chǐ zài shū zhuō shàng
教授取出圆规和直尺，在书桌上
pū kāi zhǐ ràng tā zài zì jǐ de miàn qián zài huà chū
铺开纸，让他在自己的面前再画出
yí gè zhèng shí qī biān xíng
一个正十七边形。



In the morning, Gauss went to see the professor with the answers to the four math problems. He felt guiltily and said to the professor: "The fourth question you gave me, I actually took all night. I **did not meet up to your expectations**....."

The professor took Gauss' homework and asked Gauss in a **trembling voice**: "Did you really do this yourself? How many times did you try?"

Gauss looked at the professor feeling confused, and replied, "It took me a whole night to do it, and I did it **countless times**!"

The professor took out the compasses and ruler, **spread** the paper on the desk, and asked him to draw another heptagon in front of him.

dāng gāo sī wán chéng hòu jiào shòu jī dòng de duì tā shuō nǐ zhī dào ma nǐ
当高斯完成后，教授激动地对他说：“你知道吗？你
jiě kāi le yí dào yǐ yǒu liǎng qiān duō nián lì shǐ de shù xué nán tí zhè ge nán tí jiù lián
解开了一道已有两千多年历史的数学难题！这个难题就连
ā jī mǐ dé hé niú dùn dòu méi néng jiě dá nǐ jìng rán zhǐ yòng yí gè wǎn shàng jiù wán
阿基米德和牛顿都没能解答，你竟然只用一个晚上就完
chéng le nǐ zhēn shì yì míng shù xué tiān cái
成了，你真是一名数学天才！”

yuán lái jiào shòu yě yì zhí xiǎng jiě dá zhè dào shù xué nán tí nà tiān tā yì
原来，教授也一直想解答这道数学难题。那天，他一
shí shī wù cái jiāng xiě yǒu zhè tí mù de zhǐ zhāng jiā zài gāo sī de zuò yè lǐ
时失误才将写有这题目的纸张夹在高斯的作业里。

hòu lái gāo sī bèi rén men chēng wéi shù xué wáng zǐ
后来，高斯被人们称为“数学王子”。

When Gauss finished, the professor excitedly said to him: "Did you know? You have solved a mathematical problem of more than two thousand years old! Not even Archimedes or Newton could solve this problem. And you managed to do it in one night, you're a math **genius**!"

It turned out that the professor had always wanted to solve this mathematical problem. That day, he made a mistake and clipped the paper together with Gauss's homework.

In the end, Gauss is known as the "Prince of Mathematics".

fēng

风

唐·李峤

jiě luò sān qiū yè ,
解落三秋叶，
néng kāi èr yuè huā 。
能开二月花。
guò jiāng qiān chǐ làng ,
过江千尺浪，
rù zhú wàn gān xié 。
入竹万竿斜。

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