

# Mathematical Wizards - The Minus Money

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How often have you seen a headline in your local paper saying “Maths Whiz Does Something Really Brilliant” or words to that effect? Usually the story is accompanied by a picture of a happy young person with a broad smile. Perhaps you have known such a “maths whiz”? Was it your sister? Or your brother? What about cousin Robin? Maybe it was you! If it wasn’t you, you perhaps wondered about the “brilliant thing” that they were said to have done? What was it? Don’t ask me, I don’t know. Better ask your Mum. What *do* I know about then? Well, I don’t know much - but I do know that those people in the paper aren’t real maths whizzes. No, I don’t want to get into a big argument with your uncle about Robin - yes, I know he’s six feet six and used to play pro-football. Let me explain. Did you know, for example, that “maths whiz” is short for “mathematical wizard”? No? Well it’s true and what I meant is that those young people in the papers are not “maths whizzes” because they aren’t real wizards at all. How do I know? I’ll have you know that I know a lot of very real wizards, some of them highly mathematical, and they are all extremely elderly. Most of them are so old that they never went to school at all and those that did so graduated long, long ago.

In stories concerning wizards, by the way, I hope you realise that I am not allowed to say just “long ago” or “far away”, it has to be “long, long ago”, “far, far away”, “too, too much”, “heavy, heavy metal” and so on – nothing else will do! I do believe you don’t believe me! Well, I think that perhaps it is you who doesn’t know much about wizards - at least about mathematical ones. Did you know, for example, that all wizards have to be called by names which end in “Alf”. It’s true - there was Gandalf, he was very famous. He turned from grey to white and had a lot of bother with orcs, goblins and the like. Did I know him? Of course not, he lived long, long ago. The two that I knew were called Randalf and Ralf. What colour were they? Oh, just the same as you and me - but they were very mathematical. How do I know? Goodness me, you *are* a hard one to convince. I know because I know a story about something they once did. What

was it? Ah, ha! That would be telling. Oh, well, if you insist.

The story is not just about Ralf and Randolph. It is also about their two assistants. Wizards sometimes have helpers - called sorcerers' apprentices - and their names have to end in Ric. It's true - well, almost always, and in this case their names were Elfric and Alfric.

Randolph and Ralf lived in an unusual block of flats. Can you guess what was strange about it? Well, for one thing, there were no doors to get from room to room and there were no lifts to get from floor to floor. Do you know why that was? No, not a forgetful architect! That's right! Wizards are magical people who can pass right through walls, ceilings and floors. Only when they want to, of course, only when they recite the right spell - or else they would be forever falling through into the flat below.

Randolph, who was high up in the world of wizardry, appropriately lived in a penthouse - a top floor flat - and Ralf was always popping in unexpectedly.

"Ow! Ralf, you gave me such a fright," Randolph exclaimed every time Ralf appeared through the floor of the TV room. "Be careful where you pop up, you might break my new TV set."

"I'm very careful, no mishaps yet," replied Ralf, shrugging his shoulders.

"I wish you'd learn to knock before entering."

"There's no door to knock on."

"Well, knock on the wall then."

"I tried, but my knuckles just went through the wall as if it was made of thin air."

"Excuses, excuses! Thin air!" grumbled Randolph. "Who ever heard of fat air?"

"Anyway, don't be mean with me. I didn't intend to scare you."

Fortunately, Ralf and Randolph never really fell out over their want of doors. After all, doorlessness was only a minor inconvenience to them. Most of the time they were happy that no doors meant no unwanted callers.

However, no doors and no elevators was be a source of real problems for their apprentices, Alfric and Elfric.

You see, an apprentice is someone who is still in training. For example, an apprentice mechanic is still learning how to fix cars. An apprentice chef is still learning how to cook. An apprentice wizard is still learning how to cast magical spells. In the cases of Alfric and Elfric sometimes their spells worked perfectly and sometimes they were an utter flop.

One day Ralf appeared through Randolph's kitchen floor, in order not to break the TV, preceded by a puff of blue smoke. He found his friend pacing angrily to

and fro, holding the telephone in his hand.

“Did you like the puff of smoke?” asked Ralf cheerfully. “It is supposed to give you a warning that I’m coming. Clever, eh? It lessens the shock, see? Like it?”

“I’d prefer red smoke,” replied Randalf.

“Why are you in such a bad mood?”

“I called the two Ric’s ten minutes ago and they still haven’t arrived. How dare they keep me waiting. If I had been this late when Gandalf summoned me he would have turned me into an insect.”

“Ouch,” winced Ralf, recalling the many painful punishments of his own apprenticeship. “Why on earth did you use the phone? What was wrong with an old-fashioned wizardly spell to summon them?”

“I didn’t want to flatten my batteries.”

“At least they’d be here by now.”

Randalf removed his tall, pointed sorcerer’s hat, slowly and thoughtfully scratching his head, “They said they’d come at once. I wonder what has happened to them.”

Ralf, staring out of the window, replied with a mischievous grin, “I think I can answer that one. Look here.” He pointed to one and a half figures far below.

Can you guess who the one and a half figures were? And what they were doing? That’s correct! Elfric was sitting on the footpath at the base of the building, nursing a sore head. His running-through-walls spell hadn’t worked at all this time. He had charged, head first, into the wall where any normal block of flats would have had its front entrance. Instead of passing through the brickwork, according to plan, he had bounced painfully right back. Alfric had been slightly luckier. His semi-successful attempt had left him with his leg-wagging hindquarters out in the street and his arm-wriggling front quarters in the custodian’s headquarters. The furious custodian, a short-tempered fellow with no patience for intruders, was beating Alfric about the head and shoulders with a brush. The apprentice’s muffled screams could be heard as far away as Randalf’s penthouse.

“I wondered what those strangled gurgling sounds were,” Randalf remarked, finally realising what had happened to his assistants. “I’ve a good mind to let them stew where they are.”

“I thought you had a job for them to do?”

“I have. Otherwise I really would leave them where they are.”

“Cheer up,” grinned Ralf. “They’re only apprentices. We must be patient with learners.”

“I suppose you’re right,” Randalph conceded, snapping his fingers. Immediately Alfric and Elfric appeared in the room, preceded by a puff of red smoke.

“I see what you mean,” admitted Ralf. “The red is much better than the blue.”

“I always use red or yellow,” confided Randalph. “My old school colours. The great Gandalf sometimes used to use white puffs, but I think they look too much like atmospheric pollution. Then nobody takes it seriously.”

“Sorry we’re late, boss,” apologised Elfric, sitting on the floor massaging his aching head. Alfric examined himself for bruises around the waist.

“How many times must I tell you two to practice more often? Ten times a day, walking through thin sheets of paper and recycled cardboard. Infinite repetition! That’s the key to success! If you don’t practice you’ll just get caught with your pants down.”

“Oh, no! I didn’t did I?” whined Alfric.

“Not this time,” said Elfric.

“Thank goodness.” added Ralf. Alfric had gone red in the face with embarrassment - or perhaps with the exertion of attempting to examine his own back for bruises.

“Let’s get down to business,” snapped Randalph. “ I can’t spend all day discussing such ... er ...”

“Stuff?” suggested Elfric helpfully.

“..... stuff,” concluded Randalph. “I have a job for you.”

“For us?” The apprentices’ faces brightened up at the prospect of redeeming themselves in the sight of their master. After all, if they botched up too many spells Randalph was likely to fail them on the final exam. Then they would never become magicians.

“What’s this job, boss?” asked Alfric, continuing to massage a sore shoulder.

Randalph crossed to the refrigerator, opened the freezer and took out a small sack about the size of a packet of frozen peas. Unlike peas it rattled when he laid it on the table.

“I want you to distribute these .....” His voice trailed off. Randalph was staring at Alfric with a concerned look. “Perhaps I should do this myself. How can I trust a delicate task like this to someone who gets his bum caught in walls?”

“Don’t be too harsh, Randalph,” chuckled Ralf. “We were all apprentices once – do you remember the time when that eagle stole your trousers?”

“Oh, not that ....” Randalph protested.

“In the High Street, as I remember.”

Randalf waved his hands in protest, emitting a confusion of embarrassed grunts.

“Then two policewomen came along ...”

Randalf cleared his throat loudly, in the manner of someone important about to say something very significant, and exclaimed, “All right! Enough of that! I want these distributed among the townspeople.” he opened the sack and tipped out a handful of coins onto the table for Elfric and Alfric to see.

“Oooh, Brilliant!” shouted Elfric excitedly. “I always wanted a chance to give money to the poor.”

“These aren’t just for the poor,” Randalf continued. “They are for everyone. These are very special coins. I call them Minus Pennies.”

“Minus Pennies?” chorused Elfric, Alfric and Ralf.

“Yes. Minus Pennies. Let me explain. Haven’t you noticed, when you go to buy something, that the price is very often so many pounds and ninety-nine pence? A pair of shoes – twenty-five pounds and ninety-nine pence. A tee shirt – nine pounds and ninety-nine pence – and so on. Well, each of these coins is worth minus one penny. Giving this to someone is just like taking one penny from them.

“I see! I see!” screamed Elfric, hopping up and down with delight.

“See what?” puzzled Alfric.

“To buy the shoes you give twenty-six pounds and one Minus Penny.”

“Correct.”

“A ten pound note and a Minus Penny for the tee shirt.”

“Right.”

“That’s clever, old chap,” Ralf congratulated Randalf. “So very convenient. It will do away with all that scrambling around for change. We won’t end up with pockets bulging with coins any more!”

“That’s my intention,” said Randalf proudly. “Just a few Minus Pennies will suffice.”

“What must we do?”

“Take this bag and give away its contents, a few coins to each person you meet. This is what we wizards call a Market Trial. Explain how the Minus Penny works and give the person ten of them.”

“No problem, boss.”

“Don’t forget to give them one of my business cards, too!”

“O.K., boss.” Instead of leaving, Alfric and Elfric seemed to hesitate.

“What’s up?” The apprentices exchanged rather awkward glances. Ralf realised their problems and laughed loudly.

“They can’t get out!” He waved his hands above his head in two large opposite spirals and the young men vanished in a puff of yellow smoke. “You know, Randalph, I think that yellow may be even better than red. What do you think?”

One afternoon, two weeks later, the wizards were sitting in Randalph’s kitchen practicing making coloured puffs of smoke. They were trying without much success to produce the pure white which had made the great Gandalf so famous.

“I give up,” moaned Ralf. “In any case, Gandalf was only famous after he started appearing in the movies!” The telephone rang.

“Oh, bother,” muttered Randalph picking up the receiver. “Hello, who is that? Ugh, what a lot of noise on the line.”

“You’d better get down here quick,” Alfric was shouting into the telephone at the other end of the line. “It’s chaos down here, Elfric and I are ...” The line went dead.

“Who was that?”

“Alfric. I couldn’t hear him very well but I think he wants me to go down there right away.”

“Strange. I sounded very noisy there. Are they in a disco?”

“I hope not. I’m too old for discotheques.” By way of illustration Randalph hummed a few bars from a Boyzone number to which he made a rather arthritic attempt to dance.

“Nonsense,” said Ralf, rubbing his hands gleefully. “You’re never too old for a disco! Let’s go.” With a clap of Ralf’s hands they disappeared in a puff of mauve smoke.

“Bother, it’s not a disco, it’s a shopping mall,” Ralf grumbled when they reappeared. He pointed to Alfric and Efric, surrounded by a clamouring crowd near the check-out lanes.

Someone in the crowd around the Rics noticed the wizards, “That’s him, the one with the pointed hat.” Immediately a determined-looking lady brandishing an umbrella bustled over to them. The clamouring crowd followed suit and within seconds Randalph was surrounded.

“Is this *your* card?”

“Thieves!”

“Steady on, folks,” Randalph shouted to make himself heard over the din. “One at a time. What’s up? What about you, madam?”

“Your lads stole my money and now my old man’s in prison.”

“That was quick,” said Ralf, “you only got the coins two weeks ago.”

“It was them TV police. They’re very fast.”

“Ah, yes,” Ralf nodded in agreement. “Next day service, I believe.”

“Alfric and Elfric wouldn’t steal. They’re good boys.”

“We gave this lady ten Minus Pennies, boss,” explained Elfric.

“Yes, that’s it. Them funny coins.”

“That wasn’t theft, madam. I designed those coins for your convenience, to save messing about with change.”

“Convenience my foot! When I used them all when I paid the TV licence, instead of paying on time they said I was twenty pence short ....”

“I think she means ten pence short, boss.”

“I’m afraid the lady is correct, Alfric. Giving in ninety-nine pounds ninety pence and ten Minus Pennies totals only ninety-nine pounds eighty pence towards a hundred pound licence fee. That’s twenty pence short!”

“.....and two days later my Fredric ...”

“Was he ever an apprentice wizard?” put in the curious Elfric.

“...was arrested by the police for not having a TV licence.”

“Where is he now?”

“Still in the clink.”

Ralf waved his hands, another puff of smoke – red and orange stripes this time – and behold, Fredric appeared. “Here’s your Fredric, Madam,” said Ralf with a self-satisfied flourish. “And here’s twenty pence – twenty real pence. Please accept the apologies of the management.”

“Management, huh!” grumbled the lady. “Look what you’ve done to him with your puffs of smoke. He’s gone daft.” It was true that Fredric seemed very bemused as he was gently led away. “Come along, love, let’s go and have a nice cup o’ tea at Sainsbury’s.”

“You see, it doesn’t do to overdose on Minus Pennies,” Ralf explained to the rest of the crowd, which had quietened down a little by now. “Use them sparingly. A fifty pence coin and two minus pennies for a newspaper when the shop has run out of change - things like that. Just now and again. For convenience.”

“Who’s convenience? In any case, I could always pay fifty pence for a forty-eight pence paper. I’ve done that before. I suppose you could call it convenient ....”

“Mmm, I hadn’t thought of that,” Ralf admitted, looking worried. “The gentleman at the back has a good point.”

“....but it sounds like daylight robbery to me! There nothing much in them papers anyway, except the racing results.”

“It’s all right for you, Mister Pointed Hat,” came another angry voice from the back of the crowd, “But your funny money won’t work in cash machines.”

“Or chocolate machines.”

“That is serious,” the wizard admitted. Then he had an idea, at once he went from looking very worried to smiling widely. “I’ll tell you what. Since you don’t like my money why don’t you give it all back to me?”

“You want us to *give* you money? We’re not made of the stuff, you know.”

“It’s all right,” Ralf butted in to reassure them. “Giving away Minus Pennies is like being *given* proper money. You’ll make a profit.”

After a few moments of uncertainty the crowd reluctantly started to hand over the coins. By the time the crowd eventually dispersed Ralf had a large sack filled with Minus Pennies. Ralf wondered what to do with them.

“We must get rid of them.”

“How?”

“Let’s take them to a bank!”

“Good idea, Elfric.”

Not all good ideas are as good as they seem. At the bank the clerk looked disappointedly at the pile of coins and shook his head. He looked at his watch and then at the wizards. “After 3.30 p.m. I can only take deposits in bank notes. There are far too many little coins here for me to count before we close.”

“But what about withdrawals?” asked Ralf. “Can we have a withdrawal with lots of small coins?”

“Certainly,” the cashier seemed baffled. “Why do you want to know?”

“Well, these are Minus Pennies. Depositing them into Ralf’s account is just like withdrawing from it.”

“There, you see? So you *can* do it after 3.30 p.m.,” said Ralf triumphantly.

“No, I can’t. What I meant was that the coins are already counted. They are tallied in small packets of one pound’s worth. So it is easy to give them out to withdrawers. This isn’t the same sort of thing at all.”

“Perhaps I could see the manager?”

“I’m sorry, sir, but that’s impossible. She golfs in the afternoons.”

“Dammit, Ralf, what can we do?”

Before Ralf could answer a deep voice rang out.

“Hello, what’s goin’ on ‘ere?” Ralf turned to see a large policeman scrutinising him. “Are you havin’ some twouble, sir?”

“No trouble, officer. I’m just trying to deposit my minus pennies.”



“Minus – minus is it? That wings a bell.” The constable took a notebook from his pocket and began leafing through the pages. “Hhmmm, .... macawoni .. no, that’s the shopping ... mawwiage guidance, no that’s tomowwow ... ah, here it is! Minus Pennies. Mmmm.” He took another long look at Randalf. “Pointed ‘at. Thwee accomplices. You wouldn’t ‘appen to be Wizard Wandalf, would you?”

Randalf hardly knew what to say. Talking to police officers, even nice polite ones, always made him nervous because it reminded him of the incident with the trousers in the High Street. “Yes, officer, I’m Wandalf - - er, I mean Randalf.”

“Then I’m afwaid that I have to awwest you.” He pulled out a pair of large handcuffs.

“What for?” The policeman stood up really straight and tall, trying to appear very official. He too was rather nervous. He had never tried to arrest a wizard before.

“I am awwesting you in the name of the law for the unlawful wecent welease of one Fwedwic Wamsbottom fwom Her Majesty’s Pwison at Wormwood Scwubs.”

“Does he mean Rormrood Scwubs?” Alfric whispered to Elfric.

“No, I think he means Wormwoods Scrubs.”

“I can’t let you arrest my colleague. He is a very famous wizard. You should see his puffs of magical blue smoke ...” At this remark Randalf looked rather embarrassed and mumbled something about his red being better. “... so I cannot possibly allow you to arrest him. We are leaving, come on, Randalf.”

“Stop, in the name of the law!”

Ushering the others in front of him, Ralf stopped and turned a very angry gaze on the policeman. “Don’t try my patience, you man. Take that!” There was a loud thunderclap accompanied by a perfectly white puff of smoke. “My goodness, I must tell Randalf about that one,” Ralf told himself as he hurried from the bank.

“Stop! Hey, you rotten law-breaking rabble. I want you to return right ...” His voice trailed away. A look of horror spread slowly over his face. With a shudder the policeman shook himself into action, furiously waving the handcuffs he ran after the wizards. “Come back! Come back! Is this some sort of joke? You’ve made me talk funny.”

Behind the constable came the sound of running feet. “Hey, stop police! Bank robbery! Bank robbery!” It was the unhelpful bank clerk. The policeman turned to see the clerk sturggling towards him carrying a large sack of coins slung over his shoulder. The coins were the Minus Money which Randalf had tried to deposit.

“What robbery?” asked the policeman. He had never seen a bank robbery before. Here was a chance for promotion if he could catch some robbers.

“The wizards left this sack of coins in the bank. Even though I told them to take it away.”

“I don’t think that’s robbery, is it? People are supposed to leave money in banks.”

“But this is Minus Money - really weird stuff – leaving a sack of it in a bank is like running off with a sack of real money.”

“Oh, I see,” said the puzzled policeman, not sure that he really did see. He hesitated.

“Go on,” shouted the bank clerk, pointing after the departing wizards. “Arrest them!”

Judge Udo was a stern looking judge. He wore a white wig and a long red robe. He had been chosen to try the mathematical wizards and their apprentices because he was a bit of a maths whizz himself. The courtroom was filled with a crowd of wizards. Fredric Ramsbottom was there with his wife as well many others who had been given the Minus Pennies. From his judging seat, Udo looked down at the accused: Randalf, Ralf and the Rics.

“What are your names?”

“Randalf, Ralf, Alfric, Elfric, your honour.”

“Do you see the pile of money marked Exhibit One?”

“Yes, your honour.”

“Did you steal this money from the bank?”

“No, sir.”

Judge Udo sighed. “Remember that you are under oath which means that you must tell the truth in court. You were seen. Now let me ask you again. Did you steal this money from the bank?”

“No, sir.”

“Are you trying to make me very angry?” Randalf shook his head. “Then why do you keep saying no?”

Randalf spoke up, “We didn’t steal it, your honour. I left it there. These are my coins - they are called Minus Money.”

By now Udo was very annoyed. “Stop lying. Witness saw you at the bank.”

“It’s not a lie, your honour. This is Minus Money,” Randalf went over to the exhibit table and picked up two coins. “This is a Minus Penny and a Minus Twopence, your honour. It works the opposite way to real money. I invented

it to help people with their change in shops. Here I have a tenpence piece but together with my Minus Twopence the two are only worth eight pence. Would your honour like to try?" Randalf reached in his pocket and pulled out two real coins. "Look at these four coins, your honour." With his long, long fingernail Randalf pushed forward one tenpence, one fivepence, one Minus Penny and one Minus Twopence to form a straight line on the desk in front of Udo. "Can your honour make thirteen pence with these?"

"Easy! Tenpence, fivepence and the Minus Twopence."

"Good. What about making sixpence with them?"

Udo thought hard for quite a while. Eventually he asked, "Well, can I?"

"No, your honour."

"I thought not."

There was another long silence during which Udo gazed at the ceiling. Randalf was afraid that he had annoyed the judge even more. At last Udo slowly turned his stern gaze on Randalf. Then on the pile of Minus Money. Then Randalf. Then the Minus Money. Suddenly Udo laughed loudly and spread some coins in front of Randalf. "Your turn. Can you make seven pence with these?" Randalf did. "What about seventeen?" "Impossible, your honour."

Udo clapped his hands and grinned broadly. "This game is fun. Case dismissed. Come into my chambers, Randalf. Bring your money, I'd like to play some more of this!"

Many in the court disagreed with the verdict. There was a lot of grumbling and shouting – "Wotten wobbers!" "Disgraceful" and things like that – and the case made the headlines of the local paper. The headline read: "Maths Whiz Does Something Really Brilliant" and this time it really meant what it said.

THE END