

Grandparents

Students often choose to interpret questions in ways that differ greatly from those imagined by the question-setter. Take this problem on sequences.

Grandma gives Henry £5 on his third birthday, and then increases this amount by £2 for each subsequent birthday.

I looked at the question as it shimmered on my whiteboard, and my thoughts ran obediently along the lines prescribed by the setter - 'This is about arithmetic sequences.'

But what were my students thinking? As I surveyed the room, I could see little appreciation of the mathematics of the situation. The word that had leapt out at my youngsters was 'Grandma'. For each of my students that word was now summoning up pictures of their own grandmothers - how did the Grandma of the problem compare with their own? In the question, her rule seemed to speak of financial fidelity, of an increasing monetary commitment mirroring a growing love for her grandchild. Had any of my students' grandmothers been as explicit in the unwavering nature of their future generosity? Maybe in real life there are invisible emotional strings attached to birthday gifts, and by giving just one year at a time, conditions are silently put in place over next year.

But then the question goes on;

Grandpa gives Henry £5 on his first birthday, and then increases this amount by 10% for each subsequent birthday.

Rachel gasps. 'So he gets one present from his Grandma and another from his Grandpa!'

The human aspect of this tale began to take over. Have Grandma and Grandpa conferred about their gifts? Does the separateness of their giving reflect some deep division in their marriage? Once the first few terms of Grandpa's giving are calculated, it is agreed that he is a bit odd.

£5, £5.50, £6.05, £6.66, £7.32...

'So if I say, 'I've seen a scarf for £7.33 that I really like, Grandpa,' said Emily, 'Then he will say, 'Sorry, you are only getting £7.32. I have a system, you know.'

'That's what you get for having a grandparent who's a maths teacher,' muttered Lewis.

'And for Christmas, Henry,' said Teala, putting on a stern voice, 'You will be getting a radian pounds!'

I did my best to drag the class back to the question.

On which birthday does the total amount received by Henry from Grandma first exceed £650?

The answer turned out to be the 26th.

'I don't believe it!' said Daniel, aghast. 'My grandparents disowned me when I was 15!'

I am all for really real-life problems appearing in classrooms – but does the above question qualify? The question is 'real' yet strangely unreal at the same time, which led to my students being distracted from the mathematics in hand. Would the setter concede that it would be hard to find a genuine Grandma and Grandpa in the land who would actually behave this way?

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