

## Brian's Puzzle of the Week: 10

My great uncle died recently, and he left 5 valuable gold coins to me and my two brothers and two sisters. The 5 coins look the same, but vary slightly in weight. No two of the coins have the same weight.

His instructions are that the heaviest coin should go to the oldest of us, the second heaviest to the next oldest, and so on, until the youngest receives the lightest gold coin.

Being keen on puzzles, he set us the following task.

- Using only a balance scale to compare two coins at a time, sort the coins from heaviest to lightest in 7 weighings.

If we are unable to carry out this task, all the coins will go to his favourite charity.



*A balance scale: at each weighing, one coin goes in each basket.*

1. Can you find a general procedure for sorting the 5 coins in 8 weighings?
2. Can you find a general procedure for sorting the 5 coins in 7 weighings, so I can inherit my coin?
3. Can you explain why there is no general procedure for sorting the 5 coins in 6 weighings?