

# Mathematical Problem Solving

## GCSE example

### Solution to example 22

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Sam and Max are organising a 60<sup>th</sup> birthday party for their grandfather.

They wish to invite as many friends and family as possible.

They have £2500 to spend.

One caterer says that the cost is £24 per person but for over 100 people they offer a 15% discount.

The other caterer provides this table:

Number of people	Cost per person
Over 100	£21
75 - 99	£23
50 - 74	£25
Up to 49	£27

Work out the maximum number of people they can pay for.

Show working to compare the maximum number of people for **both** options.

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For caterer 1

$2500 \div 24 = 104.17$  with no discount so it would be possible to have more people with the discount.

$$0.15 \times 24 = \text{£}3.60$$

$$\text{£}24 - \text{£}3.60 = \text{£}20.40$$

$$2500 \div 20.40 = 122.55$$

They could pay for 122 people.

For caterer 2

$$2500 \div 21 = 119.05$$

They could pay for 119 people.