I thought that the 1st child will end up with the most money as the 1st child will receive 1/6 of highest possible amount of the remaining money

When I worked it out:

Starting -£25

£1 & 1/6 of £24 = £5

£20 left

£2 & 1/6 of £18= £5

£15 left

£3 & 1/6 of £12 = £5

I'm surprised that the children receives the same amount of money

Mrs Hobson has shared out £16 between 4 children and each child has received £4

Because if there are 4 children each will receive £4; and if there are 4 children the money that is shared out will be a square of 4 (as there are 4 children)

The mother will share out £64 as there are 8 children and the fraction that she will use is 1/9 in order to share the money equally.

I realised that there was a connection between the number of children and the fraction that is used to share out; so if there are n children the fraction will be

1/n+1. E.g. for 5 children the fraction will be 1/5+1= 1/6

When looking at the 3 problems I perceived that if there are n numbers of children, the money that you share out will be £n^2

One thing that I have realised is that if there are n children; each child will get £n

So here is an algebraic expression that I have created to work out how much money each child will get if there are n children:

£1 + (£n^2 - £1/n+1) = n

£2 + (£n^2 - £n - £2/n+1) = n

£3 + (£n^2 - £2n - £3/n+1) = n

£4 + (£n^2 - £3n - £4/n+1) = n

Therefore if you substitute any numbers into n and work through this expression you will know that the number of n children = number of £n they receive

If you substitute any numbers into n this method will always work out