Gallery commission & mind-boggling mathematics!

Here's a mathematical conundrum artists need to crack!

If Gallery A is charging commission B and VAT B
Then to work out the money an artist receives X compared to price Y
How do you do it?

So if commission is 35% and VAT is 20%
Here's the conundrum:
If the sale price is £100
35% of £100 = £35 commission to get a selling price of £135
20% of 135 = £27 VAT..... this added to the selling price makes £162

yet working backwards
20% £162 = £32.4 VAT to be deducted from the £162 leaving £129.60
And the commission payment of 35% of £129.60 which leaves 65% of £129.60 for an artist.
65% of £129.6 = £84.24.

Where has the other £15.76 disappeared to?

The answer: working forwards you are using smaller figures to calculate VAT and commission whilst working backwards the VAT and commission are calculated from the final total which is larger, and so each figure is also bigger. This is the right way to look at it as commission will be charged on the final figure though the approach to VAT varies from gallery to gallery and is always worth checking.

- Not all galleries are VAT-registered and those that aren't, don't charge VAT.
- Some galleries take the VAT from the final price.
- Some galleries only add VAT to their commission.
- Other galleries include the VAT within their commission.

Here's the link to an article that has proved helpful
artquest.org.uk/articles/view/vat-revisited1

And what is a fair commission rate is for a gallery?
Most quality galleries charge in the range 35 - 50% (with or without VAT).
This seems a large cut, but remember setting up a gallery, leasing a property, paying staff six days a week , business rates, lighting, heating, marketing, insurance etc is a considerable outlay.
Some London galleries charge up to 80% commission.