

I agree with the solution above in which it is proved that the depreciating sum will always get to its objective before the appreciating sum does.

However, the problem requires an answer as a number of years in which the appreciating sum and the depreciating sum get to their objectives, not the precise time in which they do. So, if a rate of appreciation/depreciation is small enough the sums are going to increase or decrease at a very similar rate, though the reducing sum is always ahead, you can get the sums to reach their objectives in the same year.

Experimenting with this, I tried different rates and found out that, for example, 0.5% works. Using a rate of 0.5%, the sums reach their goals in the same year: year 139.

Dani Redgrave from Obradoiro, A Coruña