Cohort spend as a function of time for yearly intervals:

Spend after *t* periods, each with a new cohort:

Eg for t=5:

Now subdivide each period into *n*, each with a cohort having *1/n* sales (compared to yearly interval)

Or, for *n* = 2

Taking the simplest possible function:

Gives

This includes a [triangular function](https://en.wikipedia.org/wiki/Triangular_number) (series comprising sum of consecutive integers)

Which approaches (for n -> ∞)

Which is the same as the integral (!)