The two firſt of theſe are, however, more generally known or diſtinguiſhed by the names of arithmetical and geometrical progreſſion. Theſe ſerieſes have already been explained and illuſtrated in the article Algebra, par­ticularly the two firſt : it therefore only remains, in this place, to add a little to what has already been done to the laſt of theſe ; namely,

INFINITE SERIES,

Is formed by dividing the numerator of a fraction by its denominator, that denominator being a compound quantity ; or by extracting the root of a ſurd.

An infinite ſeries is either *converging* or *diverging.*

A converging ſeries is that in which the magnitude of the ſeveral terms gradually diminiſh ; and a diver­ging ſeries is that in which the ſucceſſive terms increaſe in magnitude.

The *law of* an infinite ſeries is the order in which the terms are obſerved to proceed. This law is often eaſily diſcovered from a few of the firſt terms of the ſeries ; and then the ſeries may be continued as far as may be thought neceſſary, without any farther diviſion, or evolution.

An infinite ſeries, as has already been obſerved, is obtained by diviſion or evolution ; but as that method is very tedious, various other methods have been propoſed for performing the ſame in a more eaſy manner ; as, by aſſuming a ſeries with unknown coefficients, by the binomial theorem, &c.

I. *Of the Method of Series by Division and Evolution.* Rule.

Let the diviſion or evolution of the given fraction, which is to be converted into an infinite ſeries, be per­formed as in Chapters I. and IV. of our article Alge­bra, and the required ſeries will be obtained.

Examples.

From inſpection of the terms of this ſeries, it appears that each term is formed by multiplying the preceding term by *x ;* and hence it may be continued as far as may be thought neceſſary without continuing the division.