gfun[listtohypergeom] - find an hypergeometric generating function

gfun[seriestohypergeom] - find an hypergeometric generating function

Calling Sequence
listtohypergeom(l, x, [<typelist>])
seriestohypergeom(s, [<typelist>])

Parameters
l – a list
s – a series
x – the unknown variable
[typelist] – (optional) a list of generating function types

Description
• The procedures listtohypergeom and seriestohypergeom compute a 2F1 hypergeometric series in x for the generating function of the expressions in l or s. This generating function has its type specified by typelist, for example, ordinary (ogf) or exponential (egf). For a full list of available choices see gftypes.
• If typelist contains more than one element, these types are tried in order.
• If typelist is not provided, the default optionsgf=['ogf','egf'] is used. The output is a list whose second element is the type for which an equation was found, and whose first element is the hypergeometric function.
• One should give at least 6 terms in the list l or the series s.

Examples
> with(gfun):
   l:=[1,2,5,14,42,132,429,1430];
   l := [1, 2, 5, 14, 42, 132, 429, 1430]  
(2.1)
> listtohypergeom(l,x);
   \[
   \frac{4}{(1 + \sqrt{1 - 4x}^2), ogf}
   \]
(2.2)
> seriestohypergeom(series(1+2*x+5*x^2+14*x^3+42*x^4+132*x^5+429*
   x^6+1430*x^7,x, 8));
   \[
   \frac{4}{(1 + \sqrt{1 - 4x}^2), ogf}
   \]
(2.3)
See Also

gfun, gfun[parameters], gfun[guessgf], gfun[gftypes]