

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\[gftypes\]](#)