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Calculates Re and Im parts of xyz components of multipole fields from n=1 to n=10
in the Schmidt normalization, with no Condon-Shortley phase.
ψ is the multipole potential for the field being evaluated.
Written for the MoonMag framework; see https://github.com/NASA-Planetary-Science/MoonMag

In[35]:=
```
Remove["Global`*"]
(* Rule for replacing complex exponentials *)
euler = {Exp[x_] :→ Cos[x / ⅈ] + ⅈ Sin[x / ⅈ]};
(*Create potential functions from r power series and spherical harmonics*)
SphericalHarmonicC[l_, m_, θ_, ϕ_] := If[m == 0, LegendreP[l, 0, Cos[θ]], (-1)^m * Sqrt[2 * Factorial[l - m] / Factorial[l + m]] * LegendreP[l, m, Cos[θ]] * Cos[m * ϕ]]
SphericalHarmonicS[l_, m_, θ_, ϕ_] := (-1)^m * Sqrt[2 * Factorial[l - m] / Factorial[l + m]] * LegendreP[l, m, Cos[θ]] * Sin[m * ϕ]
ψginm[l_, m_, θ_, ϕ_] := r^(-(l + 1)) * SphericalHarmonicC[l, m, θ, ϕ] // Simplify;
ψhinm[l_, m_, θ_, ϕ_] := r^(-(l + 1)) * SphericalHarmonicS[l, m, θ, ϕ] // Simplify;
ψGenm[l_, m_, θ_, ϕ_] := r^l * SphericalHarmonicC[l, m, θ, ϕ] // Simplify;
ψHenm[l_, m_, θ_, ϕ_] := r^l * SphericalHarmonicS[l, m, θ, ϕ] // Simplify;
```

In[43]:=
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(* Replacement rules for trigonometric functions in terms of Cartesians *)
crep = {
   Cos[θ] → z / r,
   Cos[ϕ] → (x / r) / Sin[θ],
   Sin[ϕ] → (y / r) / Sin[θ],
   Sin[θ]^x_ /; x > 1 → (1 - (z / r)^2)^(x/2),
   Csc[θ] → 1 / (1 - (z / r)^2)^(1/2),
   Csc[θ]^x_ → 1 / (1 - (z / r)^2)^(x/2),
   Cot[θ]^x_ → ((z / r)^2 / (1 - (z / r)^2))^(x/2)};
```

In[•]:=
```
(*Replace trig functions in spherical harmonics according to above rules*)
ReplTrig[exp_] := Module[{i, buff},
  buff = exp;
  For[i = 0, i ≤ 3, i++,
   buff = Simplify[TrigExpand[buff] /. crep];
   ];
  Expand[buff] /. (r^q_ → (x^2 + y^2 + z^2)^(q / 2))
  ];
(*Create constants to divide away for clarity*)
coeff = {
1,
Sqrt[3 / 4],
Sqrt[3 / 8],
Sqrt[5 / 32],
  Sqrt[15 / 16],
  Sqrt[105 / 128],
  Sqrt[1 / 256],
  3 / 32,
  1 / 16 * Sqrt[5],
  Sqrt[11] / 64
};
(*Create gradient functions to insert into tables*)
mGradExtG[nv_, mvals_, deriv_] := -D[ReplTrig[gGenm[nv, m, 0, θ]], deriv] * coeff[[nv]] & /@mvals;
mGradExtH[nv_, mvals_, deriv_] := -D[ReplTrig[gHenm[nv, m, 0, θ]], deriv] * coeff[[nv]] & /@mvals;
mGradIndG[nv_, mvals_, deriv_] := -D[ReplTrig[gGinm[nv, m, 0, θ]], deriv] * coeff[[nv]] * ((x^2 + y^2 + z^2)^(1 / 2))^(2 nv + 3) & /@mvals;
mGradIndH[nv_, mvals_, deriv_] := -D[ReplTrig[gHinm[nv, m, 0, θ]], deriv] * coeff[[nv]] * ((x^2 + y^2 + z^2)^(1 / 2))^(2 nv + 3) & /@mvals;
```

In[•]:=
```
(*Create print formatting titles for tables*)
titles = {
{"Dipole B","(1/r^5):"},
{"Quadrupole B","(A2/r^7):"},
{"Octupole B","(A3/r^9):"},
{"Hexadecapole B","(A4/r^11):"},
{"n=5 B","(A5/r^13):"},
{"n=6 B","(A6/r^15):"},
{"n=7 B","(A7/r^17):"},
{"n=8 B","(A8/r^19):"},
{"n=9 B","(A9/r^21):"},
{"n=10 B","(A10/r^23):"}
};
(*Print excitation field components*)
```

```
Print["Uniform Bx:"]
Print[TableForm[Transpose[{mGradExtG[1, {0, 1}, x] // Simplify, mGradExtH[1, {0, 1}, x] // Simplify}], TableHeadings → {{0, 1}, {"Gnm", "Hnm"}}]]
Print["\nUniform By:"]
Print[TableForm[Transpose[{mGradExtG[1, {0, 1}, y] // Simplify, mGradExtH[1, {0, 1}, y] // Simplify}], TableHeadings → {{0, 1}, {"Gnm", "Hnm"}}]]
Print["\nUniform Bz:"]
Print[TableForm[Transpose[{mGradExtG[1, {0, 1}, z] // Simplify, mGradExtH[1, {0, 1}, z] // Simplify}], TableHeadings → {{0, 1}, {"Gnm", "Hnm"}}]]

Print["\n"]

Print["Linear Bx(-2+A2):"]
Print[TableForm[Transpose[{mGradExtG[2, {0, 1, 2}, x] * -1 / 2 // Simplify, mGradExtH[2, {0, 1, 2}, x] * -1 / 2 // Simplify}], TableHeadings → {{0, 1, 2}, {"Gnm", "Hnm"}}]]
Print["\nLinear By(-2+A2):"]
Print[TableForm[Transpose[{mGradExtG[2, {0, 1, 2}, y] * -1 / 2 // Simplify, mGradExtH[2, {0, 1, 2}, y] * -1 / 2 // Simplify}], TableHeadings → {{0, 1, 2}, {"Gnm", "Hnm"}}]]
Print["\nLinear Bz(-2+A2):"]
Print[TableForm[Transpose[{mGradExtG[2, {0, 1, 2}, z] * -1 / 2 // Simplify, mGradExtH[2, {0, 1, 2}, z] * -1 / 2 // Simplify}], TableHeadings → {{0, 1, 2}, {"Gnm", "Hnm"}}]]

Print["\n"]

(*Print induced field components*)
For[n = 1, n ≤ 10, n++,
mrange = Range[0, n];
Print["\n", titles[[n, 1]], "x", titles[[n, 2]]];
   Print[TableForm[Transpose[{mGradIndg[n, mrange, x] // Simplify, mGradIndh[n, mrange, x] // Simplify}], TableHeadings → {mrange, {"gnm", "hnm"}}]];
Print["\n", titles[[n, 1]], "y", titles[[n, 2]]];
   Print[TableForm[Transpose[{mGradIndg[n, mrange, y] // Simplify, mGradIndh[n, mrange, y] // Simplify}], TableHeadings → {mrange, {"gnm", "hnm"}}]];
Print["\n", titles[[n, 1]], "z", titles[[n, 2]]];
   Print[TableForm[Transpose[{mGradIndg[n, mrange, z] // Simplify, mGradIndh[n, mrange, z] // Simplify}], TableHeadings → {mrange, {"gnm", "hnm"}}]]
];

Print["\n"]
```

```
Uniform Bx:
```

	Gnm	Hnm
0	0	0
1	-1	0

```
Uniform By:
```

	Gnm	Hnm
0	0	0
1	0	-1

```
Uniform Bz:
```

	Gnm	Hnm
0	-1	0
1	0	0

Linear Bx(-2+A2):

	Gnm	Hnm
0	$-\frac{z}{\sqrt{3}}$	0
1	z	0
2	x	y

Linear By(-2+A2):

	Gnm	Hnm
0	$-\frac{y}{\sqrt{3}}$	0
1	0	z
2	-y	x

Linear Bz(-2+A2):

	Gnm	Hnm
0	$\frac{2z}{\sqrt{3}}$	0
1	x	y
2	0	0

Dipole Bx(1/r^5):

	gnm	hnm
0	$3 x z$	0
1	$2 x^2 - y^2 - z^2$	$3 x y$

Dipole By(1/r^5):

	gnm	hnm
0	$3 y z$	0
1	$3 x y$	$-x^2 + 2 y^2 - z^2$

Dipole Bz(1/r^5):

	gnm	hnm
0	$-x^2 - y^2 + 2 z^2$	0
1	$3 x z$	$3 y z$

Quadrupole Bx(A2/r^7):

	gnm	hnm
0	$-\sqrt{3}\ x\ (x^2 + y^2 - 4 z^2)$	0
1	$-2 z\ (-4 x^2 + y^2 + z^2)$	$10 x y z$
2	$x\ (3 x^2 - 7 y^2 - 2 z^2)$	$-2 y\ (-4 x^2 + y^2 + z^2)$

Quadrupole By[A2/r^7]:

	gnn	hnn
0	$-\sqrt{3}\ y\ (x^2 - y^2 - 4\ z^2)$	0
1	$10\ x\ y\ z$	$-2\ z\ (x^2 - 4\ y^2 + z^2)$
2	$y\ (7\ x^2 - 3\ y^2 + 2\ z^2)$	$-2\ x\ (x^2 - 4\ y^2 + z^2)$

Quadrupole Bz[A2/r^7]:

	gnn	hnn
0	$\sqrt{3}\ z\ (-3\ x^2 - 3\ y^2 + 2\ z^2)$	0
1	$-2\ x\ (x^2 + y^2 - 4\ z^2)$	$-2\ y\ (x^2 + y^2 - 4\ z^2)$
2	$5\ (x^2 - y^2)\ z$	$10\ x\ y\ z$

Octupole Bx[A3/r^9]:

	gnn	hnn
0	$-5\ \sqrt{\frac{7}{2}}\ x\ z\ (3\ x^2 + 3\ y^2 - 4\ z^2)$	0
1	$-4\ x^4 - y^4 - 3\ y^2\ z^2 - 4\ z^4 - 3\ x^2\ (y^2 - 9\ z^2)$	$-5\ x\ y\ (x^2 - y^2 - 6\ z^2)$
2	$\sqrt{10}\ x\ z\ (9\ x^2 - 9\ y^2 - 2\ z^2)$	$-2\ \sqrt{10}\ y\ z\ (-6\ x^2 - y^2 + z^2)$
3	$\sqrt{\frac{7}{2}}\ (4\ x^4 + 3\ y^2\ (y^2 + z^2) - 3\ x^2\ (7\ y^2 + z^2))$	$\sqrt{\frac{7}{2}}\ x\ y\ (15\ x^2 - 13\ y^2 - 6\ z^2)$

Octupole By[A3/r^9]:

	gnn	hnn
0	$-5\ \sqrt{\frac{7}{2}}\ y\ z\ (3\ x^2 + 3\ y^2 - 4\ z^2)$	0
1	$-5\ x\ y\ (x^2 - y^2 - 6\ z^2)$	$x^4 - 4\ y^4 - 27\ y^2\ z^2 - 4\ z^4 - 3\ x^2\ (y^2 + z^2)$
2	$\sqrt{10}\ y\ z\ (9\ x^2 - 5\ y^2 + 2\ z^2)$	$-2\ \sqrt{10}\ x\ z\ (x^2 - 6\ y^2 - z^2)$
3	$\sqrt{\frac{7}{2}}\ x\ y\ (13\ x^2 - 15\ y^2 - 6\ z^2)$	$\sqrt{\frac{7}{2}}\ (-3\ x^4 - 4\ y^4 + 3\ y^2\ z^2 + 3\ x^2\ (7\ y^2 - z^2))$

Octupole Bz[A3/r^9]:

	gnn	hnn
0	$\sqrt{\frac{5}{3}}\ (3\ x^4 + 3\ y^4 - 24\ y^2\ z^2 + 8\ z^4 + 6\ x^2\ (y^2 - 4\ z^2))$	0
1	$-5\ x\ z\ (3\ x^2 + 3\ y^2 - 4\ z^2)$	$-5\ y\ z\ (3\ x^2 + 3\ y^2 - 4\ z^2)$
2	$-\sqrt{10}\ (x^2 - y^2)\ (x^2 + y^2 - 6\ z^2)$	$-2\ \sqrt{10}\ x\ y\ (x^2 + y^2 - 6\ z^2)$
3	$7\ \sqrt{\frac{5}{3}}\ x\ (x^2 - 3\ y^2)\ z$	$-7\ \sqrt{\frac{5}{3}}\ y\ (-3\ x^2 + y^2)\ z$

Hexadecapole Bx[A4/r^11]:

	gnm	hnm
0	$3\sqrt{\frac{5}{2}}\ x\left(x^4+y^4-12y^2z^2+8z^4+2x^2\left(y^2-6z^2\right)\right)$	0
1	$-2z\left(18x^4-3y^4+y^2z^2+4z^4+x^2\left(15y^2-41z^2\right)\right)$	$-42xyz\left(x^2+y^2-2z^2\right)$
2	$-\sqrt{2}\ x\left(5x^4-9y^4+66y^2z^2+12z^4-2x^2\left(2y^2+23z^2\right)\right)$	$2\sqrt{2}\ y\left(-6x^4+y^4-5y^2z^2-6z^4+x^2\left(-5y^2+51z^2\right)\right)$
3	$6\sqrt{7}\ z\left(2x^4+y^2\left(y^2+z^2\right)-x^2\left(9y^2+z^2\right)\right)$	$6\sqrt{7}\ xyz\left(7x^2-5y^2-2z^2\right)$
4	$\sqrt{\frac{7}{2}}\ x\left(5x^4-2x^2\left(23y^2+2z^2\right)+3y^2\left(7y^2+4z^2\right)\right)$	$2\sqrt{14}\ y\left(6x^4+y^2\left(y^2+z^2\right)-x^2\left(11y^2+3z^2\right)\right)$

Hexadecapole By(A4/r^11):

	gnm	hnm
0	$3\sqrt{\frac{5}{2}}\ y\left(x^4+y^4-12y^2z^2+8z^4+2x^2\left(y^2-6z^2\right)\right)$	0
1	$-42xyz\left(x^2+y^2-2z^2\right)$	$2z\left(3x^4-18y^4+41y^2z^2-4z^4-x^2\left(15y^2+z^2\right)\right)$
2	$\sqrt{2}\ y\left(-9x^4+5y^4-46y^2z^2+12z^4+x^2\left(-4y^2+66z^2\right)\right)$	$2\sqrt{2}\ x\left(x^4-6y^4+51y^2z^2-6z^4-5x^2\left(y^2+z^2\right)\right)$
3	$6\sqrt{7}\ xyz\left(5x^2-7y^2+2z^2\right)$	$-6\sqrt{7}\ z\left(x^4+2y^4-y^2z^2+x^2\left(-9y^2+z^2\right)\right)$
4	$\sqrt{\frac{7}{2}}\ y\left(21x^4+5y^4-4y^2z^2+x^2\left(-46y^2+12z^2\right)\right)$	$-2\sqrt{14}\ x\left(x^4+6y^4-3y^2z^2+x^2\left(-11y^2+z^2\right)\right)$

Hexadecapole Bz(A4/r^11):

	gnm	hnm
0	$\sqrt{\frac{5}{2}}\ z\left(15x^4+15y^4-40y^2z^2+8z^4+10x^2\left(3y^2-4z^2\right)\right)$	0
1	$6x\left(x^4+y^4-12y^2z^2+8z^4+2x^2\left(y^2-6z^2\right)\right)$	$6y\left(x^4+y^4-12y^2z^2+8z^4+2x^2\left(y^2-6z^2\right)\right)$
2	$-21\sqrt{2}\left(x^2-y^2\right)z\left(x^2+y^2-2z^2\right)$	$-42\sqrt{2}\ xyz\left(x^2+y^2-2z^2\right)$
3	$-2\sqrt{7}\ x\left(x^2-3y^2\right)\left(x^2+y^2-8z^2\right)$	$2\sqrt{7}\ y\left(-3x^2+y^2\right)\left(x^2+y^2-8z^2\right)$
4	$9\sqrt{\frac{7}{2}}\left(x^4-6x^2y^2+y^4\right)z$	$18\sqrt{14}\ xy\left(x^2-y^2\right)z$

n=5 Bx(A5/r^13):

	gnm	hnm
0	$\frac{7}{2}\sqrt{\frac{3}{5}}\ xz\left(5x^4+5y^4-20y^2z^2+8z^4+10x^2\left(y^2-2z^2\right)\right)$	0
1	$\frac{1}{2}\left(6x^6-y^6+11y^4z^2+4y^2z^4-8z^6+x^4\left(11y^2-101z^2\right)+2x^2\left(2y^4-45y^2z^2+58z^4\right)\right)$	$\frac{7}{2}xy\left(x^4+y^4-16y^2z^2+16z^4+2x^2\left(y^2-8z^2\right)\right)$
2	$\sqrt{7}\ xz\left(-7x^4+11y^4-26y^2z^2-4z^4+x^2\left(4y^2+22z^2\right)\right)$	$-2\sqrt{7}\ yz\left(8x^4-y^4+y^2z^2+2z^4+x^2\left(7y^2-23z^2\right)\right)$
3	$-\frac{1}{2}\sqrt{\frac{21}{2}}\left(2x^6+y^6-7y^4z^2-8y^2z^4-x^4\left(7y^2+23z^2\right)+x^2\left(-8y^4+90y^2z^2+8z^4\right)\right)$	$-\frac{1}{2}\sqrt{\frac{21}{2}}\ xy\left(7x^4-5y^4+44y^2z^2+16z^4+2x^2\left(y^2-38z^2\right)\right)$
4	$\frac{1}{2}\sqrt{21}\ xz\left(7x^4+23y^4+12y^2z^2-2x^2\left(29y^2+2z^2\right)\right)$	$2\sqrt{21}\ yz\left(8x^4+y^2\left(y^2+z^2\right)-x^2\left(13y^2+3z^2\right)\right)$
5	$\frac{1}{2}\sqrt{\frac{21}{10}}\left(6x^6-5y^4\left(y^2+z^2\right)-5x^4\left(17y^2+z^2\right)+10x^2\left(8y^4+3y^2z^2\right)\right)$	$\frac{1}{2}\sqrt{\frac{21}{10}}\ xy\left(35x^4+31y^4+20y^2z^2-10x^2\left(11y^2+2z^2\right)\right)$

n=5 By(A5/r^13):

	gnm	hnm
0	$\frac{7}{2}\sqrt{\frac{3}{5}}\, y z \left(5 x^4+5 y^4-20 y^2 z^2+8 z^4+10 x^2 \left(y^2-2 z^2\right)\right)$	0
1	$\frac{7}{2} x y \left(x^4+y^4-16 y^2 z^2+16 z^4+2 x^2 \left(y^2-8 z^2\right)\right)$	$\frac{1}{2}\left(-x^6+6 y^6-101 y^4 z^2+116 y^2 z^4-8 z^6+x^4 \left(4 y^2+11 z^2\right)+x^2 \left(11 y^4-90 y^2 z^2+4 z^4\right)\right)$
2	$\sqrt{7}\, y z \left(-11 x^4+7 y^4-22 y^2 z^2+4 z^4+x^2 \left(-4 y^2+26 z^2\right)\right)$	$2 \sqrt{7}\, x z \left(x^4-8 y^4+23 y^2 z^2-2 z^4-x^2 \left(7 y^2+z^2\right)\right)$
3	$\frac{1}{2}\sqrt{\frac{21}{2}}\, x y \left(-5 x^4+7 y^4-76 y^2 z^2+16 z^4+2 x^2 \left(y^2+22 z^2\right)\right)$	$\frac{1}{2}\sqrt{\frac{21}{2}} \left(x^6+2 y^6-23 y^4 z^2+8 y^2 z^4-x^4 \left(8 y^2+7 z^2\right)+x^2 \left(-7 y^4+90 y^2 z^2-8 z^4\right)\right)$
4	$\frac{1}{2}\sqrt{21}\, y z \left(23 x^4+7 y^4-4 y^2 z^2+x^2 \left(-58 y^2+12 z^2\right)\right)$	$-2 \sqrt{21}\, x z \left(x^4+8 y^4-3 y^2 z^2+x^2 \left(-13 y^2+z^2\right)\right)$
5	$\frac{1}{2}\sqrt{\frac{21}{10}}\, x y \left(31 x^4+5 y^2 \left(7 y^2-4 z^2\right)+x^2 \left(-110 y^2+20 z^2\right)\right)$	$-\frac{1}{2}\sqrt{\frac{21}{10}} \left(5 x^6-6 y^6+5 y^4 z^2+x^4 \left(-80 y^2+5 z^2\right)+5 x^2 \left(17 y^4-6 y^2 z^2\right)\right)$

n=5 Bz(A5/r^13):

	gnm	hnm
0	$-\frac{1}{2}\sqrt{\frac{3}{5}} \left(5 x^6+5 y^6-90 y^4 z^2+120 y^2 z^4-16 z^6+15 x^4 \left(y^2-6 z^2\right)+15 x^2 \left(y^4-12 y^2 z^2+8 z^4\right)\right)$	0
1	$\frac{7}{2} x z \left(5 x^4+5 y^4-20 y^2 z^2+8 z^4+10 x^2 \left(y^2-2 z^2\right)\right)$	$\frac{7}{2} y z \left(5 x^4+5 y^4-20 y^2 z^2+8 z^4+10 x^2 \left(y^2-2 z^2\right)\right)$
2	$\sqrt{7} \left(x^2-y^2\right) \left(x^4+y^4-16 y^2 z^2+16 z^4+2 x^2 \left(y^2-8 z^2\right)\right)$	$2 \sqrt{7}\, x y \left(x^4+y^4-16 y^2 z^2+16 z^4+2 x^2 \left(y^2-8 z^2\right)\right)$
3	$-\frac{3}{2}\sqrt{\frac{21}{2}}\, x \left(x^2-3 y^2\right) z \left(3 x^2+3 y^2-8 z^2\right)$	$\frac{3}{2}\sqrt{\frac{21}{2}}\, y \left(-3 x^2+y^2\right) z \left(3 x^2+3 y^2-8 z^2\right)$
4	$-\frac{1}{2}\sqrt{21} \left(x^4-6 x^2 y^2+y^4\right) \left(x^2+y^2-10 z^2\right)$	$-2 \sqrt{21}\, x y \left(x^2-y^2\right) \left(x^2+y^2-10 z^2\right)$
5	$\frac{11}{2}\sqrt{\frac{21}{10}}\, x \left(x^4-10 x^2 y^2+5 y^4\right) z$	$\frac{11}{2}\sqrt{\frac{21}{10}}\, y \left(5 x^4-10 x^2 y^2+y^4\right) z$

n=6 Bx(A6/r^15):

	gnm	hnm
0	$-\sqrt{\frac{7}{30}}\, x \left(5 x^6+5 y^6-120 y^4 z^2+240 y^2 z^4-64 z^6+15 x^4 \left(y^2-8 z^2\right)+15 x^2 \left(y^4-16 y^2 z^2+16 z^4\right)\right)$	0
1	$\sqrt{\frac{2}{5}}\, z \left(40 x^6-5 y^6+15 y^4 z^2+12 y^2 z^4-8 z^6+75 x^4 \left(y^2-3 z^2\right)+6 x^2 \left(5 y^4-35 y^2 z^2+26 z^4\right)\right)$	$3 \sqrt{\frac{2}{5}}\, x y z \left(15 x^4+15 y^4-80 y^2 z^2+48 z^4+10 x^2 \left(3 y^2-8 z^2\right)\right)$
2	$\frac{1}{2} x \left(7 x^6-11 y^6+210 y^4 z^2-240 y^2 z^4-32 z^6+3 x^4 \left(y^2-50 z^2\right)-15 x^2 \left(y^4-4 y^2 z^2-16 z^4\right)\right)$	$y \left(8 x^6-y^6+15 y^4 z^2-16 z^6+15 x^4 \left(y^2-11 z^2\right)+6 x^2 \left(y^4-25 y^2 z^2+40 z^4\right)\right)$
3	$z \left(-24 x^6-9 y^6+15 y^4 z^2+24 y^2 z^4+x^4 \left(75 y^2+95 z^2\right)+6 x^2 \left(15 y^4-55 y^2 z^2-4 z^4\right)\right)$	$-x y z \left(81 x^4-51 y^4+140 y^2 z^2+48 z^4+30 x^2 \left(y^2-10 z^2\right)\right)$
4	$-\sqrt{\frac{3}{10}}\, x \left(7 x^6+23 y^6-240 y^4 z^2-120 y^2 z^4-3 x^4 \left(17 y^2+32 z^2\right)+x^2 \left(-35 y^4+720 y^2 z^2+40 z^4\right)\right)$	$-2 \sqrt{\frac{6}{5}}\, y \left(8 x^6+y^6-9 y^4 z^2-10 y^2 z^4-5 x^4 \left(y^2+21 z^2\right)-6 x^2 \left(2 y^4-25 y^2 z^2-5 z^4\right)\right)$
5	$\sqrt{\frac{33}{5}}\, z \left(8 x^6-5 y^4 \left(y^2+z^2\right)+30 x^2 y^2 \left(3 y^2+z^2\right)-5 x^4 \left(21 y^2+z^2\right)\right)$	$\sqrt{\frac{33}{5}}\, x y z \left(45 x^4+33 y^4+20 y^2 z^2-10 x^2 \left(13 y^2+2 z^2\right)\right)$
6	$\frac{1}{2}\sqrt{\frac{11}{5}}\, x \left(7 x^6-43 y^6-30 y^4 z^2-3 x^4 \left(47 y^2+2 z^2\right)+15 x^2 \left(15 y^4+4 y^2 z^2\right)\right)$	$\sqrt{\frac{11}{5}}\, y \left(24 x^6-3 y^4 \left(y^2+z^2\right)-5 x^4 \left(23 y^2+3 z^2\right)+6 x^2 \left(11 y^4+5 y^2 z^2\right)\right)$

n=6 By(A6/r^15):

	gnm	hnm
0	$-\sqrt{\frac{7}{30}}\, y \left(5 x^6+5 y^6-120 y^4 z^2+240 y^2 z^4-64 z^6+15 x^4 \left(y^2-8 z^2\right)+15 x^2 \left(y^4-16 y^2 z^2+16 z^4\right)\right)$	0
1	$3 \sqrt{\frac{2}{5}}\, x y z \left(15 x^4+15 y^4-80 y^2 z^2+48 z^4+10 x^2 \left(3 y^2-8 z^2\right)\right)$	$-\sqrt{\frac{2}{5}}\, z \left(5 x^6-40 y^6+225 y^4 z^2-156 y^2 z^4+8 z^6-15 x^4 \left(2 y^2+z^2\right)-3 x^2 \left(25 y^4-70 y^2 z^2+4 z^4\right)\right)$
2	$\frac{1}{2} y \left(11 x^6-7 y^6+150 y^4 z^2-240 y^2 z^4+32 z^6+15 x^4 \left(y^2-14 z^2\right)-3 x^2 \left(y^4+20 y^2 z^2-80 z^4\right)\right)$	$-x \left(x^6-8 y^6+165 y^4 z^2-240 y^2 z^4+16 z^6-3 x^4 \left(2 y^2+5 z^2\right)-15 x^2 \left(y^4-10 y^2 z^2\right)\right)$
3	$x y z \left(-51 x^4+81 y^4-300 y^2 z^2+48 z^4+10 x^2 \left(3 y^2+14 z^2\right)\right)$	$z \left(9 x^6+24 y^6-95 y^4 z^2+24 y^2 z^4-15 x^4 \left(6 y^2+z^2\right)-3 x^2 \left(25 y^4-110 y^2 z^2+8 z^4\right)\right)$
4	$-\sqrt{\frac{3}{10}}\, y \left(23 x^6+7 y^6-96 y^4 z^2+40 y^2 z^4-5 x^4 \left(7 y^2+48 z^2\right)-3 x^2 \left(17 y^4-240 y^2 z^2+40 z^4\right)\right)$	$2 \sqrt{\frac{6}{5}}\, x \left(x^6+8 y^6-105 y^4 z^2+30 y^2 z^4-3 x^4 \left(4 y^2+3 z^2\right)-5 x^2 \left(y^4-30 y^2 z^2+2 z^4\right)\right)$
5	$\sqrt{\frac{33}{5}}\, x y z \left(33 x^4+5 y^2 \left(9 y^2-4 z^2\right)+x^2 \left(-130 y^2+20 z^2\right)\right)$	$\sqrt{\frac{33}{5}}\, z \left(-5 x^6+8 y^6-5 y^4 z^2+x^4 \left(90 y^2-5 z^2\right)-15 x^2 \left(7 y^4-2 y^2 z^2\right)\right)$
6	$\frac{1}{2} \sqrt{\frac{11}{5}}\, y \left(43 x^6-7 y^6+6 y^4 z^2+x^4 \left(-225 y^2+30 z^2\right)+3 x^2 \left(47 y^4-20 y^2 z^2\right)\right)$	$\sqrt{\frac{11}{5}}\, x \left(-3 x^6+3 y^4 \left(8 y^2-5 z^2\right)+x^4 \left(66 y^2-3 z^2\right)-5 x^2 \left(23 y^4-6 y^2 z^2\right)\right)$

n=6 Bz(A6/r^15):

	gnm	hnm
0	$-\sqrt{\frac{7}{30}}\, z \left(35 x^6+35 y^6-210 y^4 z^2+168 y^2 z^4-16 z^6+105 x^4 \left(y^2-2 z^2\right)+21 x^2 \left(5 y^4-20 y^2 z^2+8 z^4\right)\right)$	0
1	$-\sqrt{\frac{2}{5}}\, x \left(5 x^6+5 y^6-120 y^4 z^2+240 y^2 z^4-64 z^6+15 x^4 \left(y^2-8 z^2\right)+15 x^2 \left(y^4-16 y^2 z^2+16 z^4\right)\right)$	$-\sqrt{\frac{2}{5}}\, y \left(5 x^6+5 y^6-120 y^4 z^2+240 y^2 z^4-64 z^6+15 x^4 \left(y^2-8 z^2\right)+15 x^2 \left(y^4-16 y^2 z^2+16 z^4\right)\right)$
2	$\frac{3}{2} \left(x^2-y^2\right) z \left(15 x^4+15 y^4-80 y^2 z^2+48 z^4+10 x^2 \left(3 y^2-8 z^2\right)\right)$	$3 x y z \left(15 x^4+15 y^4-80 y^2 z^2+48 z^4+10 x^2 \left(3 y^2-8 z^2\right)\right)$
3	$x \left(x^2-3 y^2\right) \left(3 x^4+3 y^4-60 y^2 z^2+80 z^4+6 x^2 \left(y^2-10 z^2\right)\right)$	$y \left(3 x^2-y^2\right) \left(3 x^4+3 y^4-60 y^2 z^2+80 z^4+6 x^2 \left(y^2-10 z^2\right)\right)$
4	$-11 \sqrt{\frac{3}{10}} \left(x^4-6 x^2 y^2+y^4\right) z \left(3 x^2+3 y^2-10 z^2\right)$	$-22 \sqrt{\frac{6}{5}}\, x y \left(x^2-y^2\right) z \left(3 x^2+3 y^2-10 z^2\right)$
5	$-\sqrt{\frac{33}{5}}\, x \left(x^4-10 x^2 y^2+5 y^4\right) \left(x^2+y^2-12 z^2\right)$	$-\sqrt{\frac{33}{5}}\, y \left(5 x^4-10 x^2 y^2+y^4\right) \left(x^2+y^2-12 z^2\right)$
6	$\frac{13}{2} \sqrt{\frac{11}{5}} \left(x^6-15 x^4 y^2+15 x^2 y^4-y^6\right) z$	$13 \sqrt{\frac{11}{5}}\, x y \left(3 x^4-10 x^2 y^2+3 y^4\right) z$

n=7 Bx(A7/r^17):

	gnm	hnm
0	$-9 x z \left(35 x^6+35 y^6-280 y^4 z^2+336 y^2 z^4-64 z^6+35 x^4 \left(3 y^2-8 z^2\right)+7 x^2 \left(15 y^4-80 y^2 z^2+48 z^4\right)\right)$	0
1	$-\frac{1}{2} \sqrt{7} \left(40 x^8-5 y^8+115 y^6 z^2-120 y^4 z^4-176 y^2 z^6+64 z^8+5 x^6 \left(23 y^2-247 z^2\right)+15 x^4 \left(7 y^4-157 y^2 z^2+232 z^4\right)+x^2 \left(25 y^6-1005 y^4 z^2+3360 y^2 z^4-1616 z^6\right)\right)$	$-\frac{45}{2} \sqrt{7}\, x y \left(x^6+y^6-30 y^4 z^2+80 y^2 z^4-32 z^6+3 x^4 \left(y^2-10 z^2\right)+x^2 \left(3 y^4-60 y^2 z^2+80 z^4\right)\right)$
2	$\sqrt{\frac{21}{2}}\, x z \left(135 x^6+x^4 \left(75 y^2-970 z^2\right)+x^2 \left(-255 y^4+260 y^2 z^2+944 z^4\right)-3 \left(65 y^6-410 y^4 z^2+272 y^2 z^4+32 z^6\right)\right)$	$\sqrt{42}\, y z \left(150 x^6-15 y^6+65 y^4 z^2+32 y^2 z^4-48 z^6+15 x^4 \left(19 y^2-69 z^2\right)+2 x^2 \left(60 y^4-485 y^2 z^2+456 z^4\right)\right)$
3	$\frac{3}{2} \sqrt{21} \left(8 x^8+3 y^8-57 y^6 z^2+20 y^4 z^4+80 y^2 z^6-x^6 \left(17 y^2+207 z^2\right)+x^4 \left(-55 y^4+585 y^2 z^2+420 z^4\right)-x^2 \left(27 y^6-735 y^4 z^2+1320 y^2 z^4+80 z^6\right)\right)$	$\frac{3}{2} \sqrt{21}\, x y \left(27 x^6-17 y^6+378 y^4 z^2-480 y^2 z^4-160 z^6+x^4 \left(37 y^2-678 z^2\right)+x^2 \left(-7 y^4-300 y^2 z^2+1280 z^4\right)\right)$
4	$\sqrt{231}\, x z \left(-27 x^6+x^4 \left(183 y^2+128 z^2\right)+5 x^2 \left(27 y^4-176 y^2 z^2-8 z^4\right)+15 y^2 \left(-5 y^4+16 y^2 z^2+8 z^4\right)\right)$	$-4 \sqrt{231}\, y z \left(30 x^6+3 y^6-7 y^4 z^2-10 y^2 z^4-15 x^4 \left(y^2+9 z^2\right)+x^2 \left(-42 y^4+170 y^2 z^2+30 z^4\right)\right)$
5	$\frac{1}{2} \sqrt{231} \left(-8 x^8+x^6 \left(97 y^2+127 z^2\right)+5 y^4 \left(y^4-11 y^2 z^2-12 z^4\right)+15 x^4 \left(y^4-103 y^2 z^2-4 z^4\right)+x^2 \left(-85 y^6+1185 y^4 z^2+360 y^2 z^4\right)\right)$	$\frac{1}{2} \sqrt{231}\, x y \left(-45 x^6-33 y^6+402 y^4 z^2+240 y^2 z^4+x^4 \left(85 y^2+690 z^2\right)+x^2 \left(97 y^4-1820 y^2 z^2-240 z^4\right)\right)$
6	$3 \sqrt{\frac{3003}{2}}\, x z \left(3 x^6-x^4 \left(57 y^2+2 z^2\right)+5 x^2 \left(17 y^4+4 y^2 z^2\right)-5 \left(3 y^6+2 y^4 z^2\right)\right)$	$-3 \sqrt{6006}\, y z \left(-10 x^6+y^4 \left(y^2+z^2\right)+5 x^4 \left(9 y^2+z^2\right)-2 x^2 \left(12 y^4+5 y^2 z^2\right)\right)$
7	$\frac{1}{2} \sqrt{429} \left(8 x^8+7 y^6 \left(y^2+z^2\right)+105 x^4 y^2 \left(5 y^2+z^2\right)-7 x^6 \left(31 y^2+z^2\right)-7 x^2 \left(29 y^6+15 y^4 z^2\right)\right)$	$\frac{1}{2} \sqrt{429}\, x y \left(63 x^6-57 y^6-42 y^4 z^2-7 x^4 \left(61 y^2+6 z^2\right)+7 x^2 \left(59 y^4+20 y^2 z^2\right)\right)$

n=7 By(A7/r^17):

	gnm	hnm
0	$-9 y z (35 x^6 + 35 y^6 - 280 y^4 z^2 + 336 y^2 z^4 - 64 z^6 + 35 x^4 (3 y^2 - 8 z^2) + 7 x^2 (15 y^4 - 80 y^2 z^2 + 48 z^4))$	0
1	$-\frac{45}{2}\sqrt{7} x y (x^6 + y^6 - 30 y^4 z^2 + 80 y^2 z^4 - 32 z^6 + 3 x^4 (y^2 - 10 z^2) + x^2 (3 y^4 - 60 y^2 z^2 + 80 z^4))$	$\frac{1}{2}\sqrt{7} (5 x^8 - 40 y^8 + 1235 y^6 z^2 - 3480 y^4 z^4 + 1616 y^2 z^6 - 64 z^8 - 5 x^6 (5 y^2 + 23 z^2) - 15 x^4 (7 y^4 - 67 y^2 z^2 - 8 z^4) + x^2 (-115 y^6 + 2355 y^4 z^2 - 3360 y^2 z^4 + 176 z^6))$
2	$\sqrt{\frac{21}{2}} y z (195 x^6 - 135 y^6 + 970 y^4 z^2 - 944 y^2 z^4 + 96 z^6 + 15 x^4 (17 y^2 - 82 z^2) + x^2 (-75 y^4 - 260 y^2 z^2 + 816 z^4))$	$-\sqrt{42} x z (15 x^6 - 150 y^6 + 1035 y^4 z^2 - 912 y^2 z^4 + 48 z^6 - 5 x^4 (24 y^2 + 13 z^2) + x^2 (-285 y^4 + 970 y^2 z^2 - 32 z^4))$
3	$\frac{3}{2}\sqrt{21} x y (17 x^6 - 27 y^6 + 678 y^4 z^2 - 1280 y^2 z^4 + 160 z^6 + 7 x^4 (y^2 - 54 z^2) + x^2 (-37 y^4 + 300 y^2 z^2 + 480 z^4))$	$-\frac{3}{2}\sqrt{21} (3 x^8 + 8 y^8 - 207 y^6 z^2 + 420 y^4 z^4 - 80 y^2 z^6 - 3 x^6 (9 y^2 + 19 z^2) + x^4 (-55 y^4 + 735 y^2 z^2 + 20 z^4) + x^2 (-17 y^6 + 585 y^4 z^2 - 1320 y^2 z^4 + 80 z^6))$
4	$\sqrt{231} y z (-75 x^6 - 27 y^6 + 128 y^4 z^2 - 40 y^2 z^4 + 15 x^4 (9 y^2 + 16 z^2) + x^2 (183 y^4 - 880 y^2 z^2 + 120 z^4))$	$4\sqrt{231} x z (3 x^6 - 7 x^4 (6 y^2 + z^2) - 5 x^2 (3 y^4 - 34 y^2 z^2 + 2 z^4) + 15 (2 y^6 - 9 y^4 z^2 + 2 y^2 z^4))$
5	$\frac{1}{2}\sqrt{231} x y (-33 x^6 + x^4 (97 y^2 + 402 z^2) - 15 y^2 (3 y^4 - 46 y^2 z^2 + 16 z^4) + 5 x^2 (17 y^4 - 364 y^2 z^2 + 48 z^4))$	$\frac{1}{2}\sqrt{231} (5 x^8 - 8 y^8 + 127 y^6 z^2 - 60 y^4 z^4 - 5 x^6 (17 y^2 + 11 z^2) + 15 x^4 (y^4 + 79 y^2 z^2 - 4 z^4) + x^2 (97 y^6 - 1545 y^4 z^2 + 360 y^2 z^4))$
6	$3\sqrt{\frac{3003}{2}} y z (15 x^6 - 3 y^6 + 2 y^4 z^2 + x^4 (-85 y^2 + 10 z^2) + x^2 (57 y^4 - 20 y^2 z^2))$	$-3\sqrt{6006} x z (x^6 + x^4 (-24 y^2 + z^2) + 5 y^4 (-2 y^2 + z^2) + 5 x^2 (9 y^4 - 2 y^2 z^2))$
7	$\frac{1}{2}\sqrt{429} x y (57 x^6 - 63 y^6 + 42 y^4 z^2 - 7 x^4 (59 y^2 - 6 z^2) + 7 x^2 (61 y^4 - 20 y^2 z^2))$	$-\frac{1}{2}\sqrt{429} (7 x^8 + 8 y^8 - 7 y^6 z^2 + 7 x^6 (-29 y^2 + z^2) + 105 x^4 (5 y^4 - y^2 z^2) - 7 x^2 (31 y^6 - 15 y^4 z^2))$

n=7 Bz(A7/r^17):

	gnm	hnm
0	$6435 z^8 - 12012 z^6 (x^2 + y^2 + z^2) + 6930 z^4 (x^2 + y^2 + z^2)^2 - 1260 z^2 (x^2 + y^2 + z^2)^3 + 35 (x^2 + y^2 + z^2)^4$	0
1	$-\frac{9}{2}\sqrt{7} x z (35 x^6 + 35 y^6 - 280 y^4 z^2 + 336 y^2 z^4 - 64 z^6 + 35 x^4 (3 y^2 - 8 z^2) + 7 x^2 (15 y^4 - 80 y^2 z^2 + 48 z^4))$	$-\frac{9}{2}\sqrt{7} y z (35 x^6 + 35 y^6 - 280 y^4 z^2 + 336 y^2 z^4 - 64 z^6 + 35 x^4 (3 y^2 - 8 z^2) + 7 x^2 (15 y^4 - 80 y^2 z^2 + 48 z^4))$
2	$-15\sqrt{\frac{21}{2}} (x^2 - y^2) (x^6 + y^6 - 30 y^4 z^2 + 80 y^2 z^4 - 32 z^6 + 3 x^4 (y^2 - 10 z^2) + x^2 (3 y^4 - 60 y^2 z^2 + 80 z^4))$	$-15\sqrt{42} x y (x^6 + y^6 - 30 y^4 z^2 + 80 y^2 z^4 - 32 z^6 + 3 x^4 (y^2 - 10 z^2) + x^2 (3 y^4 - 60 y^2 z^2 + 80 z^4))$
3	$\frac{55}{2}\sqrt{21} x (x^2 - 3 y^2) z (3 x^4 + 3 y^4 - 20 y^2 z^2 + 16 z^4 + x^2 (6 y^2 - 20 z^2))$	$-\frac{55}{2}\sqrt{21} y (-3 x^2 + y^2) z (3 x^4 + 3 y^4 - 20 y^2 z^2 + 16 z^4 + x^2 (6 y^2 - 20 z^2))$
4	$3\sqrt{231} (x^4 - 6 x^2 y^2 + y^4) (x^4 + y^4 - 24 y^2 z^2 + 40 z^4 + 2 x^2 (y^2 - 12 z^2))$	$12\sqrt{231} x y (x^2 - y^2) (x^4 + y^4 - 24 y^2 z^2 + 40 z^4 + 2 x^2 (y^2 - 12 z^2))$
5	$-\frac{39}{2}\sqrt{231} x (x^4 - 10 x^2 y^2 + 5 y^4) z (x^2 + y^2 - 4 z^2)$	$-\frac{39}{2}\sqrt{231} y (5 x^4 - 10 x^2 y^2 + y^4) z (x^2 + y^2 - 4 z^2)$
6	$-\sqrt{\frac{3003}{2}} (x^6 - 15 x^4 y^2 + 15 x^2 y^4 - y^6) (x^2 + y^2 - 14 z^2)$	$-\sqrt{6006} x y (3 x^4 - 10 x^2 y^2 + 3 y^4) (x^2 + y^2 - 14 z^2)$
7	$\frac{15}{2}\sqrt{429} x (x^6 - 21 x^4 y^2 + 35 x^2 y^4 - 7 y^6) z$	$-\frac{15}{2}\sqrt{429} y (-7 x^6 + 35 x^4 y^2 - 21 x^2 y^4 + y^6) z$

n=8 Bx(A8/r^19):

	gnm	hnm
0	$\frac{15}{4} x (7 x^8 + 7 y^8 - 280 y^6 z^2 + 1120 y^4 z^4 - 896 y^2 z^6 + 128 z^8 + 28 x^6 (y^2 - 10 z^2) + 14 x^4 (3 y^4 - 60 y^2 z^2 + 80 z^4) + 28 x^2 (y^6 - 30 y^4 z^2 + 80 y^2 z^4 - 32 z^6))$	0
1	$z (-350 x^8 + 35 y^8 - 245 y^6 z^2 + 56 y^4 z^4 + 272 y^2 z^6 - 64 z^8 - 35 x^6 (29 y^2 - 103 z^2) - 7 x^4 (135 y^4 - 995 y^2 z^2 + 872 z^4) + x^2 (-245 y^6 + 3115 y^4 z^2 - 6048 y^2 z^4 + 2032 z^6))$	$-55 x y z (7 x^6 + 7 y^6 - 70 y^4 z^2 + 112 y^2 z^4 - 32 z^6 + 7 x^4 (3 y^2 - 10 z^2) + 7 x^2 (3 y^4 - 20 y^2 z^2 + 16 z^4))$
2	$\sqrt{\frac{35}{2}} x (-9 x^8 + 13 y^8 - 454 y^6 z^2 + 1420 y^4 z^4 - 608 y^2 z^6 - 64 z^8 + x^6 (-14 y^2 + 338 z^2) + 2 x^4 (6 y^4 + 111 y^2 z^2 - 610 z^4) + 10 x^2 (3 y^6 - 57 y^4 z^2 + 20 y^2 z^4 + 80 z^6))$	$\sqrt{70} y (-10 x^8 + y^8 - 29 y^6 z^2 + 50 y^4 z^4 + 48 y^2 z^6 - 32 z^8 + x^6 (-29 y^2 + 367 z^2) + x^4 (-27 y^4 + 705 y^2 z^2 - 1270 z^4) + x^2 (-7 y^6 + 309 y^4 z^2 - 1220 y^2 z^4 + 752 z^6))$
3	$-\sqrt{1155} z (-10 x^8 - 3 y^8 + 17 y^6 z^2 + 4 y^4 z^4 - 16 y^2 z^6 + x^6 (19 y^2 + 87 z^2) + x^4 (65 y^4 - 225 y^2 z^2 - 108 z^4) + x^2 (33 y^6 - 295 y^4 z^2 + 312 y^2 z^4 + 16 z^6))$	$\sqrt{1155} x y z (33 x^6 - 19 y^6 + 138 y^4 z^2 - 96 y^2 z^4 - 32 z^6 + x^4 (47 y^2 - 278 z^2) - 5 x^2 (y^4 + 28 y^2 z^2 - 64 z^4))$
4	$\frac{1}{2} \sqrt{77} x (9 x^8 - 4 x^6 (13 y^2 + 68 z^2) + x^4 (-106 y^4 + 1728 y^2 z^2 + 664 z^4) - 20 x^2 (y^6 - 68 y^4 z^2 + 212 y^2 z^4 + 8 z^6) + 5 y^2 (5 y^6 - 128 y^4 z^2 + 184 y^2 z^4 + 96 z^6))$	$2 \sqrt{77} y (10 x^8 + y^8 - 23 y^6 z^2 + 16 y^4 z^4 + 40 y^2 z^6 + 5 x^6 (y^2 - 59 z^2) + x^4 (-19 y^4 + 115 y^2 z^2 + 680 z^4) - x^2 (13 y^6 - 387 y^4 z^2 + 760 y^2 z^4 + 120 z^6))$
5	$-5 \sqrt{1001} z (2 x^8 - y^8 + 3 y^6 z^2 + 4 y^4 z^4 - x^6 (23 y^2 + 11 z^2) + x^4 (-5 y^4 + 125 y^2 z^2 + 4 z^4) + x^2 (19 y^6 - 85 y^4 z^2 - 24 y^2 z^4))$	$-5 \sqrt{1001} x y z (11 x^6 + 7 y^6 - 26 y^4 z^2 - 16 y^2 z^4 - x^4 (19 y^2 + 58 z^2) + x^2 (-23 y^4 + 140 y^2 z^2 + 16 z^4))$
6	$-\sqrt{\frac{429}{2}} x (3 x^8 - 54 x^6 (y^2 + z^2) + 14 x^4 (2 y^4 + 69 y^2 z^2 + 2 z^4) + 5 y^4 (-3 y^4 + 42 y^2 z^2 + 28 z^4) + 70 x^2 (y^6 - 19 y^4 z^2 - 4 y^2 z^4))$	$\sqrt{858} y (-10 x^8 + y^8 - 13 y^6 z^2 - 14 y^4 z^4 + 35 x^6 (y^2 + 5 z^2) + 7 x^4 (3 y^4 - 105 y^2 z^2 - 10 z^4) + x^2 (-23 y^6 + 357 y^4 z^2 + 140 y^2 z^4))$
7	$\sqrt{715} z (10 x^8 + 7 y^6 (y^2 + z^2) - 7 x^6 (37 y^2 + z^2) + 35 x^4 (17 y^4 + 3 y^2 z^2) - 7 x^2 (31 y^6 + 15 y^4 z^2))$	$\sqrt{715} x y z (77 x^6 - 59 y^6 - 42 y^4 z^2 - 7 x^4 (71 y^2 + 6 z^2) + 35 x^2 (13 y^4 + 4 y^2 z^2))$
8	$\frac{1}{4} \sqrt{715} x (9 x^8 + 73 y^8 + 56 y^6 z^2 - 4 x^6 (79 y^2 + 2 z^2) + 14 x^4 (77 y^4 + 12 y^2 z^2) - 140 x^2 (5 y^6 + 2 y^4 z^2))$	$2 \sqrt{715} y (10 x^8 + y^6 (y^2 + z^2) - 7 x^6 (13 y^2 + z^2) + 7 x^4 (19 y^4 + 5 y^2 z^2) - x^2 (37 y^6 + 21 y^4 z^2))$

n=8 By(A8/r^19):

	gnm	hnm
0	$\frac{15}{4} y (7 x^8 + 7 y^8 - 280 y^6 z^2 + 1120 y^4 z^4 - 896 y^2 z^6 + 128 z^8 + 28 x^6 (y^2 - 10 z^2) + 14 x^4 (3 y^4 - 60 y^2 z^2 + 80 z^4) + 28 x^2 (y^6 - 30 y^4 z^2 + 80 y^2 z^4 - 32 z^6))$	0
1	$-55 x y z (7 x^6 + 7 y^6 - 70 y^4 z^2 + 112 y^2 z^4 - 32 z^6 + 7 x^4 (3 y^2 - 10 z^2) + 7 x^2 (3 y^4 - 20 y^2 z^2 + 16 z^4))$	$z (35 x^8 - 350 y^8 + 3605 y^6 z^2 - 6104 y^4 z^4 + 2032 y^2 z^6 - 64 z^8 - 245 x^6 (y^2 + z^2) + x^4 (-945 y^4 + 3115 y^2 z^2 + 56 z^4) + x^2 (-1015 y^6 + 6965 y^4 z^2 - 6048 y^2 z^4 + 272 z^6))$
2	$\sqrt{\frac{35}{2}} y (-13 x^8 + 9 y^8 - 338 y^6 z^2 + 1220 y^4 z^4 - 800 y^2 z^6 + 64 z^8 + x^6 (-30 y^2 + 454 z^2) - 2 x^4 (6 y^4 - 285 y^2 z^2 + 710 z^4) + 2 x^2 (7 y^6 - 111 y^4 z^2 - 100 y^2 z^4 + 304 z^6))$	$\sqrt{70} x (x^8 - 10 y^8 + 367 y^6 z^2 - 1270 y^4 z^4 + 752 y^2 z^6 - 32 z^8 - x^6 (7 y^2 + 29 z^2) + x^4 (-27 y^4 + 309 y^2 z^2 + 50 z^4) + x^2 (-29 y^6 + 705 y^4 z^2 - 1220 y^2 z^4 + 48 z^6))$
3	$\sqrt{1155} x y z (19 x^6 - 33 y^6 + 278 y^4 z^2 - 320 y^2 z^4 + 32 z^6 + x^4 (5 y^2 - 138 z^2) + x^2 (-47 y^4 + 140 y^2 z^2 + 96 z^4))$	$\sqrt{1155} z (-3 x^8 - 10 y^8 + 87 y^6 z^2 - 108 y^4 z^4 + 16 y^2 z^6 + x^6 (33 y^2 + 17 z^2) + x^4 (65 y^4 - 295 y^2 z^2 + 4 z^4) + x^2 (19 y^6 - 225 y^4 z^2 + 312 y^2 z^4 - 16 z^6))$
4	$\frac{1}{2} \sqrt{77} y (25 x^8 + 9 y^8 - 272 y^6 z^2 + 664 y^4 z^4 - 160 y^2 z^6 - 20 x^6 (y^2 + 32 z^2) + x^4 (-106 y^4 + 1360 y^2 z^2 + 920 z^4) + x^2 (-52 y^6 + 1728 y^4 z^2 - 4240 y^2 z^4 + 480 z^6))$	$-2 \sqrt{77} x (x^8 - x^6 (13 y^2 + 23 z^2) + x^4 (-19 y^4 + 387 y^2 z^2 + 16 z^4) + 5 x^2 (y^6 + 23 y^4 z^2 - 152 y^2 z^4 + 8 z^6) + 5 (2 y^8 - 59 y^6 z^2 + 136 y^4 z^4 - 24 y^2 z^6))$
5	$-5 \sqrt{1001} x y z (7 x^6 + 11 y^6 - 58 y^4 z^2 + 16 y^2 z^4 - x^4 (23 y^2 + 26 z^2) + x^2 (-19 y^4 + 140 y^2 z^2 - 16 z^4))$	$5 \sqrt{1001} z (x^8 - 2 y^8 + 11 y^6 z^2 - 4 y^4 z^4 - x^6 (19 y^2 + 3 z^2) + x^4 (5 y^4 + 85 y^2 z^2 - 4 z^4) + x^2 (23 y^6 - 125 y^4 z^2 + 24 y^2 z^4))$
6	$\sqrt{\frac{429}{2}} y (-15 x^8 + 3 y^8 - 54 y^6 z^2 + 28 y^4 z^4 + 70 x^6 (y^2 + 3 z^2) + 14 x^4 (2 y^4 - 95 y^2 z^2 + 10 z^4) + x^2 (-54 y^6 + 966 y^4 z^2 - 280 y^2 z^4))$	$\sqrt{858} x (x^8 - x^6 (23 y^2 + 13 z^2) + 7 x^4 (3 y^4 + 51 y^2 z^2 - 2 z^4) - 5 y^4 (2 y^4 - 35 y^2 z^2 + 14 z^4) + 35 x^2 (y^6 - 21 y^4 z^2 + 4 y^2 z^4))$
7	$\sqrt{715} x y z (59 x^6 - 77 y^6 + 42 y^4 z^2 - 7 x^4 (65 y^2 - 6 z^2) + 7 x^2 (71 y^4 - 20 y^2 z^2))$	$\sqrt{715} z (-7 x^8 - 10 y^8 + 7 y^6 z^2 + 7 x^6 (31 y^2 - z^2) - 35 x^4 (17 y^4 - 3 y^2 z^2) + 7 x^2 (37 y^6 - 15 y^4 z^2))$
8	$\frac{1}{4} \sqrt{715} y (73 x^8 + 9 y^8 - 8 y^6 z^2 + x^6 (-700 y^2 + 56 z^2) + 14 x^4 (77 y^4 - 20 y^2 z^2) - 4 x^2 (79 y^6 - 42 y^4 z^2))$	$-2 \sqrt{715} x (x^8 + 10 y^8 - 7 y^6 z^2 + x^6 (-37 y^2 + z^2) + 7 x^4 (19 y^4 - 3 y^2 z^2) + x^2 (-91 y^6 + 35 y^4 z^2))$

n=8 Bz(A8/r^19):

	gnm	hnm
0	$\frac{3}{4} z (315 x^8 + 315 y^8 - 3360 y^6 z^2 + 6048 y^4 z^4 - 2304 y^2 z^6 + 128 z^8 + 420 x^6 (3 y^2 - 8 z^2) + 126 x^4 (15 y^4 - 80 y^2 z^2 + 48 z^4) + 36 x^2 (35 y^6 - 280 y^4 z^2 + 336 y^2 z^4 - 64 z^6))$	0
1	$5 x (7 x^8 + 7 y^8 - 280 y^6 z^2 + 1120 y^4 z^4 - 896 y^2 z^6 + 128 z^8 + 28 x^6 (y^2 - 10 z^2) + 14 x^4 (3 y^4 - 60 y^2 z^2 + 80 z^4) + 28 x^2 (y^6 - 30 y^4 z^2 + 80 y^2 z^4 - 32 z^6))$	$5 y (7 x^8 + 7 y^8 - 280 y^6 z^2 + 1120 y^4 z^4 - 896 y^2 z^6 + 128 z^8 + 28 x^6 (y^2 - 10 z^2) + 14 x^4 (3 y^4 - 60 y^2 z^2 + 80 z^4) + 28 x^2 (y^6 - 30 y^4 z^2 + 80 y^2 z^4 - 32 z^6))$
2	$-11 \sqrt{\frac{35}{2}} (x^2 - y^2) z (7 x^6 + 7 y^6 - 70 y^4 z^2 + 112 y^2 z^4 - 32 z^6 + 7 x^4 (3 y^2 - 10 z^2) + 7 x^2 (3 y^4 - 20 y^2 z^2 + 16 z^4))$	$-11 \sqrt{70} x y z (7 x^6 + 7 y^6 - 70 y^4 z^2 + 112 y^2 z^4 - 32 z^6 + 7 x^4 (3 y^2 - 10 z^2) + 7 x^2 (3 y^4 - 20 y^2 z^2 + 16 z^4))$
3	$-\sqrt{1155} x (x^2 - 3 y^2) (x^6 + y^6 - 36 y^4 z^2 + 120 y^2 z^4 - 64 z^6 + 3 x^4 (y^2 - 12 z^2) + 3 x^2 (y^4 - 24 y^2 z^2 + 40 z^4))$	$-\sqrt{1155} y (3 x^2 - y^2) (x^6 + y^6 - 36 y^4 z^2 + 120 y^2 z^4 - 64 z^6 + 3 x^4 (y^2 - 12 z^2) + 3 x^2 (y^4 - 24 y^2 z^2 + 40 z^4))$
4	$\frac{65}{2} \sqrt{77} (x^4 - 6 x^2 y^2 + y^4) z (x^4 + y^4 - 8 y^2 z^2 + 8 z^4 + 2 x^2 (y^2 - 4 z^2))$	$130 \sqrt{77} x y (x^2 - y^2) z (x^4 + y^4 - 8 y^2 z^2 + 8 z^4 + 2 x^2 (y^2 - 4 z^2))$
5	$\sqrt{1001} x (x^4 - 10 x^2 y^2 + 5 y^4) (x^4 + y^4 - 28 y^2 z^2 + 56 z^4 + 2 x^2 (y^2 - 14 z^2))$	$\sqrt{1001} y (5 x^4 - 10 x^2 y^2 + y^4) (x^4 + y^4 - 28 y^2 z^2 + 56 z^4 + 2 x^2 (y^2 - 14 z^2))$
6	$-5 \sqrt{\frac{429}{2}} (x^6 - 15 x^4 y^2 + 15 x^2 y^4 - y^6) z (3 x^2 + 3 y^2 - 14 z^2)$	$-5 \sqrt{858} x y (3 x^4 - 10 x^2 y^2 + 3 y^4) z (3 x^2 + 3 y^2 - 14 z^2)$
7	$-\sqrt{715} x (x^6 - 21 x^4 y^2 + 35 x^2 y^4 - 7 y^6) (x^2 + y^2 - 16 z^2)$	$\sqrt{715} y (-7 x^6 + 35 x^4 y^2 - 21 x^2 y^4 + y^6) (x^2 + y^2 - 16 z^2)$
8	$\frac{17}{4} \sqrt{715} (x^8 - 28 x^6 y^2 + 70 x^4 y^4 - 28 x^2 y^6 + y^8) z$	$34 \sqrt{715} x y (x^6 - 7 x^4 y^2 + 7 x^2 y^4 - y^6) z$

n=9 Bx(A9/r^21):

	gnm	hnm
0	$\frac{11}{8}\sqrt{5}\, x z (63 x^8 + 63 y^8 - 840 y^6 z^2 + 2016 y^4 z^4 - 1152 y^2 z^6 + 128 z^8 + 84 x^6 (3 y^2 - 10 z^2) + 126 x^4 (3 y^4 - 20 y^2 z^2 + 16 z^4) + 36 x^2 (7 y^6 - 70 y^4 z^2 + 112 y^2 z^4 - 32 z^6))$	0
1	$\frac{3}{8} (70 x^{10} - 7 y^{10} + 273 y^8 z^2 - 840 y^6 z^4 - 224 y^4 z^6 + 768 y^2 z^8 - 128 z^{10} + 21 x^8 (13 y^2 - 163 z^2) + 196 x^6 (2 y^4 - 51 y^2 z^2 + 90 z^4) + 14 x^4 (17 y^6 - 675 y^4 z^2 + 2460 y^2 z^4 - 1424 z^6) + 6 x^2 (7 y^8 - 434 y^6 z^2 + 2660 y^4 z^4 - 3360 y^2 z^6 + 832 z^8))$	$\frac{33}{8} x y (7 x^8 + 7 y^8 - 336 y^6 z^2 + 1680 y^4 z^4 - 1792 y^2 z^6 + 384 z^8 + 28 x^6 (y^2 - 12 z^2) + 42 x^4 (y^4 - 24 y^2 z^2 + 40 z^4) + 28 x^2 (y^6 - 36 y^4 z^2 + 120 y^2 z^4 - 64 z^6))$
2	$-\frac{3}{2}\sqrt{\frac{11}{2}}\, x z (77 x^8 - 105 y^8 + 1218 y^6 z^2 - 2268 y^4 z^4 + 672 y^2 z^6 + 64 z^8 + 42 x^6 (3 y^2 - 23 z^2) - 42 x^4 (2 y^4 + 17 y^2 z^2 - 50 z^4) - 2 x^2 (119 y^6 - 735 y^4 z^2 + 84 y^2 z^4 + 496 z^6))$	$-3\sqrt{\frac{11}{2}}\, y z (84 x^8 - 7 y^8 + 63 y^6 z^2 - 42 y^4 z^4 - 80 y^2 z^6 + 32 z^8 + 49 x^6 (5 y^2 - 21 z^2) + 21 x^4 (11 y^4 - 95 y^2 z^2 + 102 z^4) + 3 x^2 (21 y^6 - 301 y^4 z^2 + 700 y^2 z^4 - 304 z^6))$
3	$\frac{1}{4}\sqrt{\frac{231}{2}} (-10 x^{10} + 9 x^8 (y^2 + 49 z^2) + 84 x^6 (y^4 - 9 y^2 z^2 - 23 z^4) + 14 x^4 (7 y^6 - 195 y^4 z^2 + 330 y^2 z^4 + 116 z^6) - 3 y^2 (y^8 - 35 y^6 z^2 + 84 y^4 z^4 + 56 y^2 z^6 - 64 z^8) + 6 x^2 (5 y^8 - 238 y^6 z^2 + 1050 y^4 z^4 - 728 y^2 z^6 - 32 z^8))$	$-\frac{1}{4}\sqrt{\frac{231}{2}}\, x y (33 x^8 - 19 y^8 + 756 y^6 z^2 - 2688 y^4 z^4 + 1120 y^2 z^6 + 384 z^8 + 4 x^6 (20 y^2 - 357 z^2) + 42 x^4 (y^4 - 50 y^2 z^2 + 144 z^4) - 12 x^2 (2 y^6 - 7 y^4 z^2 - 280 y^2 z^4 + 392 z^6))$
4	$\frac{3}{4}\sqrt{1001}\, x z (11 x^8 + 27 y^8 - 224 y^6 z^2 + 168 y^4 z^4 + 96 y^2 z^6 - 4 x^6 (15 y^2 + 28 z^2) - 42 x^4 (3 y^4 - 16 y^2 z^2 - 4 z^4) - 4 x^2 (7 y^6 - 140 y^4 z^2 + 252 y^2 z^4 + 8 z^6))$	$3\sqrt{1001}\, y z (12 x^8 + y^8 - 7 y^6 z^2 + 8 y^2 z^6 + 7 x^6 (y^2 - 17 z^2) - 7 x^4 (3 y^4 - 5 y^2 z^2 - 24 z^4) - 3 x^2 (5 y^6 - 49 y^4 z^2 + 56 y^2 z^4 + 8 z^6))$
5	$\frac{3}{4}\sqrt{\frac{715}{2}} (2 x^{10} - 3 x^8 (7 y^2 + 23 z^2) - 28 x^6 (y^4 - 27 y^2 z^2 - 7 z^4) + 14 x^4 (y^6 + 15 y^4 z^2 - 150 y^2 z^4 - 4 z^6) - y^4 (y^6 - 27 y^4 z^2 + 28 y^2 z^4 + 56 z^6) + 6 x^2 (3 y^8 - 98 y^6 z^2 + 210 y^4 z^4 + 56 y^2 z^6))$	$\frac{3}{4}\sqrt{\frac{715}{2}}\, x y (11 x^8 + 7 y^8 - 204 y^6 z^2 + 336 y^4 z^4 + 224 y^2 z^6 - 4 x^6 (2 y^2 + 93 z^2) - 42 x^4 (y^4 - 14 y^2 z^2 - 24 z^4) - 4 x^2 (4 y^6 - 189 y^4 z^2 + 560 y^2 z^4 + 56 z^6))$
6	$-\frac{1}{2}\sqrt{\frac{429}{2}}\, x z (33 x^8 - 141 y^8 + 602 y^6 z^2 + 420 y^4 z^4 - 2 x^6 (285 y^2 + 103 z^2) + 42 x^4 (6 y^4 + 83 y^2 z^2 + 2 z^4) + 42 x^2 (17 y^6 - 105 y^4 z^2 - 20 y^2 z^4))$	$\sqrt{\frac{429}{2}}\, y z (-108 x^8 + 9 y^8 - 33 y^6 z^2 - 42 y^4 z^4 + 21 x^6 (17 y^2 + 31 z^2) + 7 x^4 (33 y^4 - 365 y^2 z^2 - 30 z^4) + x^2 (-225 y^6 + 1113 y^4 z^2 + 420 y^2 z^4))$
7	$-\frac{3}{8}\sqrt{\frac{143}{2}} (10 x^{10} - 3 x^8 (83 y^2 + 67 z^2) + 7 y^6 (y^4 - 15 y^2 z^2 - 16 z^4) + 28 x^6 (12 y^4 + 177 y^2 z^2 + 4 z^4) + 42 x^4 (9 y^6 - 255 y^4 z^2 - 40 y^2 z^4) - 42 x^2 (5 y^8 - 86 y^6 z^2 - 40 y^4 z^4))$	$-\frac{3}{8}\sqrt{\frac{143}{2}}\, x y (77 x^8 - 59 y^8 + 936 y^6 z^2 + 672 y^4 z^4 - 84 x^6 (5 y^2 + 18 z^2) - 42 x^4 (y^4 - 220 y^2 z^2 - 16 z^4) + 4 x^2 (99 y^6 - 1974 y^4 z^2 - 560 y^2 z^4))$
8	$\frac{3}{8}\sqrt{2431}\, x z (11 x^8 + 75 y^8 + 56 y^6 z^2 - 4 x^6 (93 y^2 + 2 z^2) + 42 x^4 (29 y^4 + 4 y^2 z^2) - 28 x^2 (27 y^6 + 10 y^4 z^2))$	$3\sqrt{2431}\, y z (12 x^8 + y^6 (y^2 + z^2) - 7 x^6 (15 y^2 + z^2) + 7 x^4 (21 y^4 + 5 y^2 z^2) - 3 x^2 (13 y^6 + 7 y^4 z^2))$
9	$\frac{1}{8}\sqrt{\frac{2431}{2}} (10 x^{10} - 9 y^8 (y^2 + z^2) + 252 x^6 y^2 (8 y^2 + z^2) - 9 x^8 (49 y^2 + z^2) - 42 x^4 (47 y^6 + 15 y^4 z^2) + 18 x^2 (23 y^8 + 14 y^6 z^2))$	$\frac{1}{8}\sqrt{\frac{2431}{2}}\, x y (99 x^8 + 91 y^8 + 72 y^6 z^2 - 12 x^6 (97 y^2 + 6 z^2) + 126 x^4 (19 y^4 + 4 y^2 z^2) - 36 x^2 (31 y^6 + 14 y^4 z^2))$

n=9 By(A9/r^21):

	gnm	hnm
0	$\frac{11}{8}\sqrt{5}\, y z (63 x^8 + 63 y^8 - 840 y^6 z^2 + 2016 y^4 z^4 - 1152 y^2 z^6 + 128 z^8 + 84 x^6 (3 y^2 - 10 z^2) + 126 x^4 (3 y^4 - 20 y^2 z^2 + 16 z^4) + 36 x^2 (7 y^6 - 70 y^4 z^2 + 112 y^2 z^4 - 32 z^6))$	0
1	$\frac{33}{8} x y (7 x^8 + 7 y^8 - 336 y^6 z^2 + 1680 y^4 z^4 - 1792 y^2 z^6 + 384 z^8 + 28 x^6 (y^2 - 12 z^2) + 42 x^4 (y^4 - 24 y^2 z^2 + 40 z^4) + 28 x^2 (y^6 - 36 y^4 z^2 + 120 y^2 z^4 - 64 z^6))$	$-\frac{3}{8} (7 x^{10} - 70 y^{10} + 3423 y^8 z^2 - 17640 y^6 z^4 + 19936 y^4 z^6 - 4992 y^2 z^8 + 128 z^{10} - 21 x^8 (2 y^2 + 13 z^2) + x^6 (-238 y^4 + 2604 y^2 z^2 + 840 z^4) - 14 x^4 (28 y^6 - 675 y^4 z^2 + 1140 y^2 z^4 - 16 z^6) - 3 x^2 (91 y^8 - 3332 y^6 z^2 + 11480 y^4 z^4 - 6720 y^2 z^6 + 256 z^8))$
2	$-\frac{3}{2}\sqrt{\frac{11}{2}}\, y z (105 x^8 - 77 y^8 + 966 y^6 z^2 - 2100 y^4 z^4 + 992 y^2 z^6 - 64 z^8 + 14 x^6 (17 y^2 - 87 z^2) + 42 x^4 (2 y^4 - 35 y^2 z^2 + 54 z^4) - 42 x^2 (3 y^6 - 17 y^4 z^2 - 4 y^2 z^4 + 16 z^6))$	$3\sqrt{\frac{11}{2}}\, x z (7 x^8 - 84 y^8 + 1029 y^6 z^2 - 2142 y^4 z^4 + 912 y^2 z^6 - 32 z^8 - 63 x^6 (y^2 + z^2) + x^4 (-231 y^4 + 903 y^2 z^2 + 42 z^4) - 5 x^2 (49 y^6 - 399 y^4 z^2 + 420 y^2 z^4 - 16 z^6))$
3	$\frac{1}{4}\sqrt{\frac{231}{2}}\, x y (-19 x^8 + 33 y^8 - 1428 y^6 z^2 + 6048 y^4 z^4 - 4704 y^2 z^6 + 384 z^8 + x^6 (-24 y^2 + 756 z^2) + 42 x^4 (y^4 + 2 y^2 z^2 - 64 z^4) + 20 x^2 (4 y^6 - 105 y^4 z^2 + 168 y^2 z^4 + 56 z^6))$	$\frac{1}{4}\sqrt{\frac{231}{2}} (3 x^{10} - 15 x^8 (2 y^2 + 7 z^2) + x^6 (-98 y^4 + 1428 y^2 z^2 + 252 z^4) - 42 x^4 (2 y^6 - 65 y^4 z^2 + 150 y^2 z^4 - 4 z^6) - 3 x^2 (3 y^8 - 252 y^6 z^2 + 1540 y^4 z^4 - 1456 y^2 z^6 + 64 z^8) + y^2 (10 y^8 - 441 y^6 z^2 + 1932 y^4 z^4 - 1624 y^2 z^6 + 192 z^8))$
4	$\frac{3}{4}\sqrt{1001}\, y z (27 x^8 + 11 y^8 - 112 y^6 z^2 + 168 y^4 z^4 - 32 y^2 z^6 - 28 x^6 (y^2 + 8 z^2) - 14 x^4 (9 y^4 - 40 y^2 z^2 - 12 z^4) - 12 x^2 (5 y^6 - 56 y^4 z^2 + 84 y^2 z^4 - 8 z^6))$	$-3\sqrt{1001}\, x z (x^8 + 12 y^8 - 119 y^6 z^2 + 168 y^4 z^4 - 24 y^2 z^6 - x^6 (15 y^2 + 7 z^2) - 21 x^4 (y^4 - 7 y^2 z^2) + x^2 (7 y^6 + 35 y^4 z^2 - 168 y^2 z^4 + 8 z^6))$
5	$\frac{3}{4}\sqrt{\frac{715}{2}}\, x y (7 x^8 + 11 y^8 - 372 y^6 z^2 + 1008 y^4 z^4 - 224 y^2 z^6 - 4 x^6 (4 y^2 + 51 z^2) - 42 x^4 (y^4 - 18 y^2 z^2 - 8 z^4) - 4 x^2 (2 y^6 - 147 y^4 z^2 + 560 y^2 z^4 - 56 z^6))$	$-\frac{3}{4}\sqrt{\frac{715}{2}} (x^{10} - 2 y^{10} + 69 y^8 z^2 - 196 y^6 z^4 + 56 y^4 z^6 - 9 x^8 (2 y^2 + 3 z^2) - 14 x^6 (y^4 - 42 y^2 z^2 - 2 z^4) + 14 x^4 (2 y^6 - 15 y^4 z^2 - 90 y^2 z^4 + 4 z^6) + 21 x^2 (y^8 - 36 y^6 z^2 + 100 y^4 z^4 - 16 y^2 z^6))$
6	$\frac{1}{2}\sqrt{\frac{429}{2}}\, y z (-141 x^8 + 33 y^8 - 206 y^6 z^2 + 84 y^4 z^4 + 14 x^6 (51 y^2 + 43 z^2) + 42 x^4 (6 y^4 - 105 y^2 z^2 + 10 z^4) - 6 x^2 (95 y^6 - 581 y^4 z^2 + 140 y^2 z^4))$	$\sqrt{\frac{429}{2}}\, x z (9 x^8 - 3 x^6 (75 y^2 + 11 z^2) + 21 x^4 (11 y^4 + 53 y^2 z^2 - 2 z^4) - 3 y^4 (36 y^4 - 217 y^2 z^2 + 70 z^4) + 7 x^2 (51 y^6 - 365 y^4 z^2 + 60 y^2 z^4))$
7	$-\frac{3}{8}\sqrt{\frac{143}{2}}\, x y (59 x^8 - 36 x^6 (11 y^2 + 26 z^2) + 42 x^4 (y^4 + 188 y^2 z^2 - 16 z^4) - 7 y^4 (11 y^4 - 216 y^2 z^2 + 96 z^4) + 140 x^2 (3 y^6 - 66 y^4 z^2 + 16 y^2 z^4))$	$\frac{3}{8}\sqrt{\frac{143}{2}} (7 x^{10} - 105 x^8 (2 y^2 + z^2) + 14 x^6 (27 y^4 + 258 y^2 z^2 - 8 z^4) + y^6 (10 y^4 - 201 y^2 z^2 + 112 z^4) + 42 x^4 (8 y^6 - 255 y^4 z^2 + 40 y^2 z^4) - 3 x^2 (83 y^8 - 1652 y^6 z^2 + 560 y^4 z^4))$
8	$\frac{3}{8}\sqrt{2431}\, y z (75 x^8 + 11 y^8 - 8 y^6 z^2 + x^6 (-756 y^2 + 56 z^2) + 14 x^4 (87 y^4 - 20 y^2 z^2) + x^2 (-372 y^6 + 168 y^4 z^2))$	$-3\sqrt{2431}\, x z (x^8 + 12 y^8 - 7 y^6 z^2 + x^6 (-39 y^2 + z^2) + 21 x^4 (7 y^4 - y^2 z^2) - 35 x^2 (3 y^6 - y^4 z^2))$
9	$\frac{1}{8}\sqrt{\frac{2431}{2}}\, x y (91 x^8 + 99 y^8 - 72 y^6 z^2 - 36 x^6 (31 y^2 - 2 z^2) + 126 x^4 (19 y^4 - 4 y^2 z^2) - 12 x^2 (97 y^6 - 42 y^4 z^2))$	$-\frac{1}{8}\sqrt{\frac{2431}{2}} (9 x^{10} - 10 y^{10} + 9 y^8 z^2 + 9 x^8 (-46 y^2 + z^2) + 42 x^6 (47 y^4 - 6 y^2 z^2) - 126 x^4 (16 y^6 - 5 y^4 z^2) + 63 x^2 (7 y^8 - 4 y^6 z^2))$

n=9 Bz(A9/r^21):

	gnm	hnm
0	$\frac{1}{8}\sqrt{5}\,(46189 z^{10} - 109395 z^8 (x^2+y^2+z^2) + 90090 z^6 (x^2+y^2+z^2)^2 - 30030 z^4 (x^2+y^2+z^2)^3 + 3465 z^2 (x^2+y^2+z^2)^4 - 63 (x^2+y^2+z^2)^5)$	0
1	$\frac{33}{8}\, x\, z\, (63 x^8 + 63 y^8 - 840 y^6 z^2 + 2016 y^4 z^4 - 1152 y^2 z^6 + 128 z^8 + 84 x^6 (3 y^2 - 10 z^2) + 126 x^4 (3 y^4 - 20 y^2 z^2 + 16 z^4) + 36 x^2 (7 y^6 - 70 y^4 z^2 + 112 y^2 z^4 - 32 z^6))$	$\frac{33}{8}\, y\, z\, (63 x^8 + 63 y^8 - 840 y^6 z^2 + 2016 y^4 z^4 - 1152 y^2 z^6 + 128 z^8 + 84 x^6 (3 y^2 - 10 z^2) + 126 x^4 (3 y^4 - 20 y^2 z^2 + 16 z^4) + 36 x^2 (7 y^6 - 70 y^4 z^2 + 112 y^2 z^4 - 32 z^6))$
2	$\frac{3}{2}\sqrt{\frac{11}{2}}\, (x^2 - y^2)\, (7 x^8 + 7 y^8 - 336 y^6 z^2 + 1680 y^4 z^4 - 1792 y^2 z^6 + 384 z^8 + 28 x^6 (y^2 - 12 z^2) + 42 x^4 (y^4 - 24 y^2 z^2 + 40 z^4) + 28 x^2 (y^6 - 36 y^4 z^2 + 120 y^2 z^4 - 64 z^6))$	$3\sqrt{\frac{11}{2}}\, x\, y\, (7 x^8 + 7 y^8 - 336 y^6 z^2 + 1680 y^4 z^4 - 1792 y^2 z^6 + 384 z^8 + 28 x^6 (y^2 - 12 z^2) + 42 x^4 (y^4 - 24 y^2 z^2 + 40 z^4) + 28 x^2 (y^6 - 36 y^4 z^2 + 120 y^2 z^4 - 64 z^6))$
3	$-\frac{13}{4}\sqrt{\frac{231}{2}}\, x\, (x^2 - 3 y^2)\, z\, (7 x^6 + 7 y^6 - 84 y^4 z^2 + 168 y^2 z^4 - 64 z^6 + 21 x^4 (y^2 - 4 z^2) + 21 x^2 (y^4 - 8 y^2 z^2 + 8 z^4))$	$\frac{13}{4}\sqrt{\frac{231}{2}}\, y\, (-3 x^2 + y^2)\, z\, (7 x^6 + 7 y^6 - 84 y^4 z^2 + 168 y^2 z^4 - 64 z^6 + 21 x^4 (y^2 - 4 z^2) + 21 x^2 (y^4 - 8 y^2 z^2 + 8 z^4))$
4	$-\frac{3}{4}\sqrt{1001}\, (x^4 - 6 x^2 y^2 + y^4)\, (x^6 + y^6 - 42 y^4 z^2 + 168 y^2 z^4 - 112 z^6 + 3 x^4 (y^2 - 14 z^2) + 3 x^2 (y^4 - 28 y^2 z^2 + 56 z^4))$	$-3\sqrt{1001}\, x\, y\, (x^2 - y^2)\, (x^6 + y^6 - 42 y^4 z^2 + 168 y^2 z^4 - 112 z^6 + 3 x^4 (y^2 - 14 z^2) + 3 x^2 (y^4 - 28 y^2 z^2 + 56 z^4))$
5	$\frac{3}{4}\sqrt{\frac{715}{2}}\, x\, (x^4 - 10 x^2 y^2 + 5 y^4)\, z\, (15 x^4 + 15 y^4 - 140 y^2 z^2 + 168 z^4 + 10 x^2 (3 y^2 - 14 z^2))$	$\frac{3}{4}\sqrt{\frac{715}{2}}\, y\, (5 x^4 - 10 x^2 y^2 + y^4)\, z\, (15 x^4 + 15 y^4 - 140 y^2 z^2 + 168 z^4 + 10 x^2 (3 y^2 - 14 z^2))$
6	$\frac{1}{2}\sqrt{\frac{429}{2}}\, (x^6 - 15 x^4 y^2 + 15 x^2 y^4 - y^6)\, (3 x^4 + 3 y^4 - 96 y^2 z^2 + 224 z^4 + 6 x^2 (y^2 - 16 z^2))$	$\sqrt{\frac{429}{2}}\, x\, y\, (3 x^4 - 10 x^2 y^2 + 3 y^4)\, (3 x^4 + 3 y^4 - 96 y^2 z^2 + 224 z^4 + 6 x^2 (y^2 - 16 z^2))$
7	$-\frac{51}{8}\sqrt{\frac{143}{2}}\, x\, (x^6 - 21 x^4 y^2 + 35 x^2 y^4 - 7 y^6)\, z\, (3 x^2 + 3 y^2 - 16 z^2)$	$\frac{51}{8}\sqrt{\frac{143}{2}}\, y\, (-7 x^6 + 35 x^4 y^2 - 21 x^2 y^4 + y^6)\, z\, (3 x^2 + 3 y^2 - 16 z^2)$
8	$-\frac{3}{8}\sqrt{2431}\, (x^8 - 28 x^6 y^2 + 70 x^4 y^4 - 28 x^2 y^6 + y^8)\, (x^2 + y^2 - 18 z^2)$	$-3\sqrt{2431}\, x\, y\, (x^6 - 7 x^4 y^2 + 7 x^2 y^4 - y^6)\, (x^2 + y^2 - 18 z^2)$
9	$\frac{19}{8}\sqrt{\frac{2431}{2}}\, x\, (x^8 - 36 x^6 y^2 + 126 x^4 y^4 - 84 x^2 y^6 + 9 y^8)\, z$	$\frac{19}{8}\sqrt{\frac{2431}{2}}\, y\, (9 x^8 - 84 x^6 y^2 + 126 x^4 y^4 - 36 x^2 y^6 + y^8)\, z$

n=10 Bx(A10/r^23):

	gnm	hnm
0	$\frac{3}{4}\sqrt{11}\, x\, (29393 z^{10} - 62985 z^8 (x^2+y^2+z^2) + 46410 z^6 (x^2+y^2+z^2)^2 - 13650 z^4 (x^2+y^2+z^2)^3 + 1365 z^2 (x^2+y^2+z^2)^4 - 21 (x^2+y^2+z^2)^5)$	0
1	$\frac{1}{2}\sqrt{5}\, z\, (756 x^{10} - 63 y^{10} + 777 y^8 z^2 - 1176 y^6 z^4 - 864 y^4 z^6 + 1024 y^2 z^8 - 128 z^{10} + 21 x^8 (141 y^2 - 587 z^2) + 84 x^6 (51 y^4 - 431 y^2 z^2 + 454 z^4) + 18 x^4 (147 y^6 - 1925 y^4 z^2 + 4172 y^2 z^4 - 1712 z^6) + 4 x^2 (126 y^8 - 2499 y^6 z^2 + 8946 y^4 z^4 - 7920 y^2 z^6 + 1504 z^8))$	$\frac{39}{2}\sqrt{5}\, x\, y\, z\, (21 x^8 + 21 y^8 - 336 y^6 z^2 + 1008 y^4 z^4 - 768 y^2 z^6 + 128 z^8 + 84 x^6 (y^2 - 4 z^2) + 126 x^4 (y^4 - 8 y^2 z^2 + 8 z^4) + 12 x^2 (7 y^6 - 84 y^4 z^2 + 168 y^2 z^4 - 64 z^6))$
2	$\frac{1}{4}\sqrt{15}\, x\, (77 x^{10} + 7 x^8 (29 y^2 - 634 z^2) + 42 x^6 (y^4 - 180 y^2 z^2 + 664 z^4) - 14 x^4 (23 y^6 - 282 y^4 z^2 - 1608 y^2 z^4 + 2896 z^6) + x^2 (-343 y^8 + 12824 y^6 z^2 - 38640 y^4 z^4 + 448 y^2 z^6 + 14464 z^8) - 3 (35 y^{10} - 1918 y^8 z^2 + 11088 y^6 z^4 - 13664 y^4 z^6 + 2944 y^2 z^8 + 256 z^{10}))$	$-\frac{1}{2}\sqrt{15}\, y\, (-84 x^{10} + 7 y^{10} - 329 y^8 z^2 + 1344 y^6 z^4 - 112 y^4 z^6 - 1408 y^2 z^8 + 384 z^{10} - 7 x^8 (47 y^2 - 681 z^2) - 28 x^6 (17 y^4 - 499 y^2 z^2 + 1044 z^4) - 42 x^4 (7 y^6 - 317 y^4 z^2 + 1360 y^2 z^4 - 968 z^6) - 4 x^2 (14 y^8 - 945 y^6 z^2 + 6636 y^4 z^4 - 10136 y^2 z^6 + 3264 z^8))$
3	$-3\sqrt{\frac{195}{2}}\, z\, (28 x^{10} - 7 x^8 (3 y^2 + 59 z^2) - 28 x^6 (8 y^4 - 23 y^2 z^2 - 39 z^4) - 2 x^4 (133 y^6 - 1225 y^4 z^2 + 1218 y^2 z^4 + 332 z^6) + y^2 (7 y^8 - 77 y^6 z^2 + 84 y^4 z^4 + 104 y^2 z^6 - 64 z^8) - 4 x^2 (21 y^8 - 329 y^6 z^2 + 861 y^4 z^4 - 420 y^2 z^6 - 16 z^8))$	$-3\sqrt{\frac{195}{2}}\, x\, y\, z\, (91 x^8 - 49 y^8 + 644 y^6 z^2 - 1344 y^4 z^4 + 352 y^2 z^6 + 128 z^8 + 28 x^6 (8 y^2 - 47 z^2) + 14 x^4 (9 y^4 - 142 y^2 z^2 + 240 z^4) - 4 x^2 (14 y^6 + 7 y^4 z^2 - 504 y^2 z^4 + 472 z^6))$
4	$-\frac{1}{2}\sqrt{195}\, x\, (11 x^{10} - x^8 (49 y^2 + 556 z^2) - 6 x^6 (31 y^4 - 480 y^2 z^2 - 476 z^4) - 14 x^4 (11 y^6 - 444 y^4 z^2 + 1164 y^2 z^4 + 208 z^6) + 3 y^2 (9 y^8 - 404 y^6 z^2 + 1624 y^4 z^4 - 672 y^2 z^6 - 448 z^8) + x^2 (-y^8 + 1568 y^6 z^2 - 14280 y^4 z^4 + 16576 y^2 z^6 + 448 z^8))$	$-2\sqrt{195}\, y\, (12 x^{10} + x^8 (19 y^2 - 597 z^2) - 14 x^6 (y^4 + 28 y^2 z^2 - 213 z^4) - 6 x^4 (6 y^6 - 161 y^4 z^2 + 105 y^2 z^4 + 476 z^6) + y^2 (y^8 - 41 y^6 z^2 + 126 y^4 z^4 + 56 y^2 z^6 - 112 z^8) + x^2 (-14 y^8 + 720 y^6 z^2 - 3486 y^4 z^4 + 2576 y^2 z^6 + 336 z^8))$
5	$\sqrt{\frac{39}{2}}\, z\, (180 x^{10} - 5 x^8 (363 y^2 + 419 z^2) - 28 x^6 (90 y^4 - 785 y^2 z^2 - 131 z^4) + 210 x^4 (5 y^6 + 35 y^4 z^2 - 178 y^2 z^4 - 4 z^6) - 5 y^4 (15 y^6 - 125 y^4 z^2 + 28 y^2 z^4 + 168 z^6) + 20 x^2 (75 y^8 - 805 y^6 z^2 + 987 y^4 z^4 + 252 y^2 z^6))$	$\sqrt{\frac{39}{2}}\, x\, y\, z\, (975 x^8 + 555 y^8 - 5220 y^6 z^2 + 4368 y^4 z^4 + 3360 y^2 z^6 - 300 x^6 (2 y^2 + 37 z^2) - 70 x^4 (51 y^4 - 230 y^2 z^2 - 264 z^4) - 20 x^2 (72 y^6 - 1099 y^4 z^2 + 1904 y^2 z^4 + 168 z^6))$
6	$\frac{3}{4}\sqrt{\frac{195}{2}}\, x\, (11 x^{10} - x^8 (179 y^2 + 426 z^2) + x^6 (-106 y^4 + 7080 y^2 z^2 + 1376 z^4) + 14 x^4 (23 y^6 - 186 y^4 z^2 - 1584 y^2 z^4 - 32 z^6) - y^4 (47 y^6 - 1542 y^4 z^2 + 2912 y^2 z^4 + 2240 z^6) + x^2 (191 y^8 - 8568 y^6 z^2 + 25760 y^4 z^4 + 4480 y^2 z^6))$	$-\frac{3}{2}\sqrt{\frac{195}{2}}\, y\, (-36 x^{10} + x^8 (83 y^2 + 1371 z^2) + 28 x^6 (7 y^4 - 153 y^2 z^2 - 152 z^4) + y^4 (3 y^6 - 93 y^4 z^2 + 128 y^2 z^4 + 224 z^6) + 2 x^4 (y^6 - 1491 y^4 z^2 + 7840 y^2 z^4 + 560 z^6) - 4 x^2 (18 y^8 - 645 y^6 z^2 + 1512 y^4 z^4 + 560 y^2 z^6))$
7	$\frac{1}{2}\sqrt{\frac{3315}{2}}\, z\, (-36 x^{10} + x^8 (867 y^2 + 251 z^2) - 28 x^6 (39 y^4 + 211 y^2 z^2 + 4 z^4) + 7 y^6 (-3 y^4 + 13 y^2 z^2 + 16 z^4) - 42 x^4 (31 y^6 - 285 y^4 z^2 - 40 y^2 z^4) + 28 x^2 (24 y^8 - 131 y^6 z^2 - 60 y^4 z^4))$	$\frac{1}{2}\sqrt{\frac{3315}{2}}\, x\, y\, z\, (-273 x^8 + 183 y^8 - 888 y^6 z^2 - 672 y^4 z^4 + 84 x^6 (17 y^2 + 22 z^2) + 14 x^4 (15 y^4 - 764 y^2 z^2 - 48 z^4) + x^2 (-1308 y^6 + 8456 y^4 z^2 + 2240 y^2 z^4))$
8	$\frac{1}{4}\sqrt{1105}\, x\, (-11 x^{10} + x^8 (361 y^2 + 244 z^2) - 18 x^6 (47 y^4 + 440 y^2 z^2 + 8 z^4) + 3 y^6 (-25 y^4 + 444 y^2 z^2 + 336 z^4) - 42 x^4 (11 y^6 - 588 y^4 z^2 - 72 y^2 z^4) + 3 x^2 (227 y^8 - 4816 y^6 z^2 - 1680 y^4 z^4))$	$-2\sqrt{1105}\, y\, (12 x^{10} - 3 x^8 (31 y^2 + 87 z^2) + y^6 (y^4 - 17 y^2 z^2 - 18 z^4) + 42 x^6 (y^4 + 52 y^2 z^2 + 3 z^4) + 18 x^4 (6 y^6 - 161 y^4 z^2 - 35 y^2 z^4) + x^2 (-38 y^8 + 720 y^6 z^2 + 378 y^4 z^4))$
9	$\frac{3}{2}\sqrt{\frac{20995}{2}}\, z\, (4 x^{10} - 3 y^8 (y^2 + z^2) + 84 x^6 y^2 (9 y^2 + z^2) - 3 x^8 (57 y^2 + z^2) - 42 x^4 (17 y^6 + 5 y^4 z^2) + 12 x^2 (12 y^8 + 7 y^6 z^2))$	$\frac{3}{2}\sqrt{\frac{20995}{2}}\, x\, y\, z\, (39 x^8 + 31 y^8 + 24 y^6 z^2 - 12 x^6 (37 y^2 + 2 z^2) + 42 x^4 (21 y^4 + 4 y^2 z^2) - 12 x^2 (33 y^6 + 14 y^4 z^2))$
10	$\frac{1}{4}\sqrt{\frac{4199}{2}}\, x\, (11 x^{10} - 5 x^8 (119 y^2 + 2 z^2) - 3 y^8 (37 y^2 + 30 z^2) + 90 x^6 (39 y^4 + 4 y^2 z^2) - 210 x^4 (23 y^6 + 6 y^4 z^2) + 15 x^2 (113 y^8 + 56 y^6 z^2))$	$\frac{1}{2}\sqrt{\frac{4199}{2}}\, y\, (60 x^{10} - 5 y^8 (y^2 + z^2) - 15 x^8 (59 y^2 + 3 z^2) + 84 x^6 (29 y^4 + 5 y^2 z^2) - 90 x^4 (19 y^6 + 7 y^4 z^2) + 20 x^2 (14 y^8 + 9 y^6 z^2))$

n=10 By(A10/r^23):

	gnm	hnm
0	$\frac{3}{4}\sqrt{11}\,y\left(29393 z^{10}-62985 z^8(x^2+y^2+z^2)+46410 z^6(x^2+y^2+z^2)^2-13650 z^4(x^2+y^2+z^2)^3+1365 z^2(x^2+y^2+z^2)^4-21(x^2+y^2+z^2)^5\right)$	0
1	$\frac{39}{2}\sqrt{5}\,x\,y\,z\left(21x^8+21y^8-336y^6z^2+1008y^4z^4-768y^2z^6+128z^8+84x^6(y^2-4z^2)+126x^4(y^4-8y^2z^2+8z^4)+12x^2(7y^6-84y^4z^2+168y^2z^4-64z^6)\right)$	$-\frac{1}{2}\sqrt{5}\,z\left(63x^{10}-756y^{10}+12327y^8z^2-38136y^6z^4+30816y^4z^6-6016y^2z^8+128z^{10}-21x^8(24y^2+37z^2)-294x^6(9y^4-34y^2z^2-4z^4)-18x^4(238y^6-1925y^4z^2+1988y^2z^4-48z^6)+x^2(-2961y^8+36204y^6z^2-75096y^4z^4+31680y^2z^6-1024z^8)\right)$
2	$\frac{1}{4}\sqrt{15}\,y\left(105x^{10}-77y^{10}+4438y^8z^2-27888y^6z^4+40544y^4z^6-14464y^2z^8+768z^{10}+7x^8(49y^2-822z^2)+14x^6(23y^4-916y^2z^2+2376z^4)-42x^4(y^6+94y^4z^2-920y^2z^4+976z^6)+x^2(-203y^8+7560y^6z^2-22512y^4z^4-448y^2z^6+8832z^8)\right)$	$-\frac{1}{2}\sqrt{15}\,x\left(7x^{10}-84y^{10}+4767y^8z^2-29232y^6z^4+40656y^4z^6-13056y^2z^8+384z^{10}-7x^8(8y^2+47z^2)-42x^6(7y^4-90y^2z^2-32z^4)-14x^4(34y^6-951y^4z^2+1896y^2z^4+8z^6)+x^2(-329y^8+13972y^6z^2-57120y^4z^4+40544y^2z^6-1408z^8)\right)$
3	$-3\sqrt{\frac{195}{2}}\,x\,y\,z\left(49x^8-91y^8+1316y^6z^2-3360y^4z^4+1888y^2z^6-128z^8+28x^6(2y^2-23z^2)-14x^4(9y^4-2y^2z^2-96z^4)-4x^2(56y^6-497y^4z^2+504y^2z^4+88z^6)\right)$	$3\sqrt{\frac{195}{2}}\,z\left(7x^{10}-7x^8(12y^2+11z^2)-14x^6(19y^4-94y^2z^2-6z^4)+x^4(-224y^6+2450y^4z^2-3444y^2z^4+104z^6)+x^2(-21y^8+644y^6z^2-2436y^4z^4+1680y^2z^6-64z^8)+y^2(28y^8-413y^6z^2+1092y^4z^4-664y^2z^6+64z^8)\right)$
4	$-\frac{1}{2}\sqrt{195}\,y\left(27x^{10}-x^8(y^2+1212z^2)+x^6(-154y^4+1568y^2z^2+4872z^4)-6x^4(31y^6-1036y^4z^2+2380y^2z^4+336z^6)+x^2(-49y^8+2880y^6z^2-16296y^4z^4+16576y^2z^6-1344z^8)+y^2(11y^8-556y^6z^2+2856y^4z^4-2912y^2z^6+448z^8)\right)$	$2\sqrt{195}\,x\left(x^{10}-x^8(14y^2+41z^2)-18x^6(2y^4-40y^2z^2-7z^4)-14x^4(y^6-69y^4z^2+249y^2z^4-4z^6)+x^2(19y^8-392y^6z^2-630y^4z^4+2576y^2z^6-112z^8)+3y^2(4y^8-199y^6z^2+994y^4z^4-952y^2z^6+112z^8)\right)$
5	$\sqrt{\frac{39}{2}}\,x\,y\,z\left(555x^8-180x^6(8y^2+29z^2)+x^4(-3570y^4+21980y^2z^2+4368z^4)-20x^2(30y^6-805y^4z^2+1904y^2z^4-168z^6)+15(65y^8-740y^6z^2+1232y^4z^4-224y^2z^6)\right)$	$\sqrt{\frac{39}{2}}\,z\left(-75x^{10}+125x^8(12y^2+5z^2)+70x^6(15y^4-230y^2z^2-2z^4)+y^4(180y^6-2095y^4z^2+3668y^2z^4-840z^6)-210x^4(12y^6-35y^4z^2-94y^2z^4+4z^6)-5x^2(363y^8-4396y^6z^2+7476y^4z^4-1008y^2z^6)\right)$
6	$\frac{3}{4}\sqrt{\frac{195}{2}}\,y\left(47x^{10}-11y^{10}+426y^8z^2-1376y^6z^4+448y^4z^6-x^8(191y^2+1542z^2)+x^6(-322y^4+8568y^2z^2+2912z^4)+2x^4(53y^6+1302y^4z^2-12880y^2z^4+1120z^6)+x^2(179y^8-7080y^6z^2+22176y^4z^4-4480y^2z^6)\right)$	$-\frac{3}{2}\sqrt{\frac{195}{2}}\,x\left(3x^{10}-36y^{10}+1371y^8z^2-4256y^6z^4+1120y^4z^6-3x^8(24y^2+31z^2)+2x^6(y^4+1290y^2z^2+64z^4)+14x^4(14y^6-213y^4z^2-432y^2z^4+16z^6)+x^2(83y^8-4284y^6z^2+15680y^4z^4-2240y^2z^6)\right)$
7	$\frac{1}{2}\sqrt{\frac{3315}{2}}\,x\,y\,z\left(-183x^8+12x^6(109y^2+74z^2)-14x^4(15y^4+604y^2z^2-48z^4)-28x^2(51y^6-382y^4z^2+80y^2z^4)+21(13y^8-88y^6z^2+32y^4z^4)\right)$	$\frac{1}{2}\sqrt{\frac{3315}{2}}\,z\left(21x^{10}-7x^8(96y^2+13z^2)+14x^6(93y^4+262y^2z^2-8z^4)+y^6(36y^4-251y^2z^2+112z^4)+42x^4(26y^6-285y^4z^2+40y^2z^4)+x^2(-867y^8+5908y^6z^2-1680y^4z^4)\right)$
8	$\frac{1}{4}\sqrt{1105}\,y\left(-75x^{10}-11y^{10}+244y^8z^2-144y^6z^4+3x^8(227y^2+444z^2)-42x^6(11y^4+344y^2z^2-24z^4)-18x^4(47y^6-1372y^4z^2+280y^2z^4)+x^2(361y^8-7920y^6z^2+3024y^4z^4)\right)$	$2\sqrt{1105}\,x\left(x^{10}-x^8(38y^2+17z^2)+18x^6(6y^4+40y^2z^2-z^4)+3y^6(4y^4-87y^2z^2+42z^4)+42x^4(y^6-69y^4z^2+9y^2z^4)-3x^2(31y^8-728y^6z^2+210y^4z^4)\right)$
9	$\frac{3}{2}\sqrt{\frac{20995}{2}}\,x\,y\,z\left(31x^8+39y^8-24y^6z^2+x^6(-396y^2+24z^2)+42x^4(21y^4-4y^2z^2)+x^2(-444y^6+168y^4z^2)\right)$	$-\frac{3}{2}\sqrt{\frac{20995}{2}}\,z\left(3x^{10}-4y^{10}+3y^8z^2+3x^8(-48y^2+z^2)+42x^6(17y^4-2y^2z^2)-42x^4(18y^6-5y^4z^2)+3x^2(57y^8-28y^6z^2)\right)$
10	$\frac{1}{4}\sqrt{\frac{4199}{2}}\,y\left(111x^{10}-11y^{10}+10y^8z^2+x^8(-1695y^2+90z^2)+210x^6(23y^4-4y^2z^2)-90x^4(39y^6-14y^4z^2)+5x^2(119y^8-72y^6z^2)\right)$	$-\frac{1}{2}\sqrt{\frac{4199}{2}}\,x\left(5x^{10}-60y^{10}+45y^8z^2+5x^8(-56y^2+z^2)+90x^6(19y^4-2y^2z^2)-42x^4(58y^6-15y^4z^2)+15x^2(59y^8-28y^6z^2)\right)$

n=10 Bz(A10/r^23):

	gnm	hnm
0	$\frac{1}{4}\sqrt{11}\,z\left(88179z^{10}-230945z^8(x^2+y^2+z^2)+218790z^6(x^2+y^2+z^2)^2-90090z^4(x^2+y^2+z^2)^3+15015z^2(x^2+y^2+z^2)^4-693(x^2+y^2+z^2)^5\right)$	0
1	$-\frac{3}{2}\sqrt{5}\,x\left(21x^{10}+21y^{10}-1260y^8z^2+8400y^6z^4-13440y^4z^6+5760y^2z^8-512z^{10}+105x^8(y^2-12z^2)+210x^6(y^4-24y^2z^2+40z^4)+210x^4(y^6-36y^4z^2+120y^2z^4-64z^6)+15x^2(7y^8-336y^6z^2+1680y^4z^4-1792y^2z^6+384z^8)\right)$	$-\frac{3}{2}\sqrt{5}\,y\left(21x^{10}+21y^{10}-1260y^8z^2+8400y^6z^4-13440y^4z^6+5760y^2z^8-512z^{10}+105x^8(y^2-12z^2)+210x^6(y^4-24y^2z^2+40z^4)+210x^4(y^6-36y^4z^2+120y^2z^4-64z^6)+15x^2(7y^8-336y^6z^2+1680y^4z^4-1792y^2z^6+384z^8)\right)$
2	$\frac{39}{4}\sqrt{15}\,(x^2-y^2)\,z\left(21x^8+21y^8-336y^6z^2+1008y^4z^4-768y^2z^6+128z^8+84x^6(y^2-4z^2)+126x^4(y^4-8y^2z^2+8z^4)+12x^2(7y^6-84y^4z^2+168y^2z^4-64z^6)\right)$	$\frac{39}{2}\sqrt{15}\,x\,y\,z\left(21x^8+21y^8-336y^6z^2+1008y^4z^4-768y^2z^6+128z^8+84x^6(y^2-4z^2)+126x^4(y^4-8y^2z^2+8z^4)+12x^2(7y^6-84y^4z^2+168y^2z^4-64z^6)\right)$
3	$7\sqrt{\frac{195}{2}}\,x(x^2-3y^2)\left(x^8+y^8-56y^6z^2+336y^4z^4-448y^2z^6+128z^8+4x^6(y^2-14z^2)+6x^4(y^4-28y^2z^2+56z^4)+4x^2(y^6-42y^4z^2+168y^2z^4-112z^6)\right)$	$7\sqrt{\frac{195}{2}}\,y(3x^2-y^2)\left(x^8+y^8-56y^6z^2+336y^4z^4-448y^2z^6+128z^8+4x^6(y^2-14z^2)+6x^4(y^4-28y^2z^2+56z^4)+4x^2(y^6-42y^4z^2+168y^2z^4-112z^6)\right)$
4	$-\frac{21}{2}\sqrt{195}\,(x^4-6x^2y^2+y^4)\,z\left(5x^6+5y^6-70y^4z^2+168y^2z^4-80z^6+5x^4(3y^2-14z^2)+x^2(15y^4-140y^2z^2+168z^4)\right)$	$-42\sqrt{195}\,x\,y(x^2-y^2)\,z\left(5x^6+5y^6-70y^4z^2+168y^2z^4-80z^6+5x^4(3y^2-14z^2)+x^2(15y^4-140y^2z^2+168z^4)\right)$
5	$-3\sqrt{\frac{39}{2}}\,x(x^4-10x^2y^2+5y^4)\left(5x^6+5y^6-240y^4z^2+1120y^2z^4-896z^6+15x^4(y^2-16z^2)+5x^2(3y^4-96y^2z^2+224z^4)\right)$	$-3\sqrt{\frac{39}{2}}\,y(5x^4-10x^2y^2+y^4)\left(5x^6+5y^6-240y^4z^2+1120y^2z^4-896z^6+15x^4(y^2-16z^2)+5x^2(3y^4-96y^2z^2+224z^4)\right)$
6	$\frac{17}{4}\sqrt{\frac{195}{2}}\,(x^6-15x^4y^2+15x^2y^4-y^6)\,z\left(15x^4+15y^4-160y^2z^2+224z^4+10x^2(3y^2-16z^2)\right)$	$\frac{17}{2}\sqrt{\frac{195}{2}}\,x\,y(3x^4-10x^2y^2+3y^4)\,z\left(15x^4+15y^4-160y^2z^2+224z^4+10x^2(3y^2-16z^2)\right)$
7	$\frac{3}{2}\sqrt{\frac{3315}{2}}\,x(x^6-21x^4y^2+35x^2y^4-7y^6)\left(x^4+y^4-36y^2z^2+96z^4+2x^2(y^2-18z^2)\right)$	$-\frac{3}{2}\sqrt{\frac{3315}{2}}\,y(-7x^6+35x^4y^2-21x^2y^4+y^6)\left(x^4+y^4-36y^2z^2+96z^4+2x^2(y^2-18z^2)\right)$
8	$-\frac{57}{4}\sqrt{1105}\,(x^8-28x^6y^2+70x^4y^4-28x^2y^6+y^8)\,z(x^2+y^2-6z^2)$	$-114\sqrt{1105}\,x\,y(x^6-7x^4y^2+7x^2y^4-y^6)\,z(x^2+y^2-6z^2)$
9	$-\frac{1}{2}\sqrt{\frac{20995}{2}}\,x(x^8-36x^6y^2+126x^4y^4-84x^2y^6+9y^8)(x^2+y^2-20z^2)$	$-\frac{1}{2}\sqrt{\frac{20995}{2}}\,y(9x^8-84x^6y^2+126x^4y^4-36x^2y^6+y^8)(x^2+y^2-20z^2)$
10	$\frac{21}{4}\sqrt{\frac{4199}{2}}\,(x^{10}-45x^8y^2+210x^6y^4-210x^4y^6+45x^2y^8-y^{10})\,z$	$\frac{21}{2}\sqrt{\frac{4199}{2}}\,x\,y(5x^8-60x^6y^2+126x^4y^4-60x^2y^6+5y^8)\,z$

In[1]:=

Out[1]=