

```

n = 3;
DeleteCases [Flatten@Table[
  {x, y, z} → P[B[x, y], z] + P[y, B[x, z]],
  {x, Basis[n]}, {y, Basis[n]}, {z, Basis[n]}
] /. {s2 → s1, s3 → 1, s4 → 1, s5 → s1, s6 → s1, s7 → 1, s8 → 1, s9 → 1, s10 → 1, s11 → 1},
_ → 0]
{}

{x, y, z} = {e1,3, f2,1, f3,2};
{ P[B[x, y], z], P[y, B[x, z]] }
{0, ∈ s3}

B[x, y]
- ∈ s3 s4 e2,1

B[x, z]
∈ s3 e1,2

DeleteCases [Table[
  ({x, y, z} = t) → B[x, B[y, z]] + B[y, B[z, x]] + B[z, B[x, y]],
  {t, Tuples[Basis[n], 3]}
] /. {s1 → -1/2, s2 → s1, s3 → 1, s4 → 1,
s5 → s1, s6 → s1, s7 → 1, s8 → 1, s9 → 1, s10 → 1, s11 → 1}, _ → 0]
{}

{x, y, z} = {e1,2, e1,3, f2,1};
{ B[y, z], B[x, B[y, z]], B[z, x], B[y, B[z, x]], B[x, y], B[z, B[x, y]] } // Column
- ∈ s3 s4 e2,3
- ∈ s3 s4 e1,3
∈ g1 s3 s5 - ∈ g2 s3 s4 s6 - h1 s3 s7 + h2 s3 s4 s8
- ∈ s3 s5 e1,3 - ∈ s2 s3 s7 e1,3
0
0

```