

```

> restart;

mult := proc(p :: list, q :: list)
  [
    p[1]*q[1] - p[2]*q[2] - p[3]*q[3] - p[4]*q[4],
    p[1]*q[2] + p[2]*q[1] + p[3]*q[4] - p[4]*q[3],
    p[1]*q[3] - p[2]*q[4] + p[3]*q[1] + p[4]*q[2],
    p[1]*q[4] + p[2]*q[3] - p[3]*q[2] + p[4]*q[1]
  ];
end proc:

mult([a, b, c, d], [e, f, g, h]);

[a*e-b*f-c*g-d*h, a*f+b*e+c*h-d*g, a*g-b*h+c*e+d*f, a*h+b*g-c*f
+d*e]

mult([8, 4, 6, 2], [2, 4, 6, 8]);

[a e - b f - c g - d h, a f + b e + c h - d g, a g - b h + c e + d f, a h + b g - c f + d e]
[a e - b f - c g - d h, a f + b e + c h - d g, a g - b h + c e + d f, a h + b g - c f + d e] [-52, (1)
76, 36, 68]
> mult([1, 5, 3, 17], [3, 11, 15, 18]);
[-403, -175, 121, 111] (2)
> mult([1, 2, 3, 4], [5, 6, 7, 10])
[-68, 18, 26, 26] (3)
>

```