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### File "Flex(E)_standard_basis"
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kat:=n->(2*n)!/n!/(n+1)!
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```
faa:=proc(p,q): proc(X): subs( seq(ull(q+1-k)=ull(q+1-k+p),k=1..q), X) end: end:  
fii:=proc(p,q): proc(X): subs(seq(vll(q+1-k)=vll(q+1-k+p),k=1..q), seq(vllk=vllk-vllp,k=p+1..p+q), X) end: end:  
fee:=proc(p,q): proc(X): fii(p,q)(faa(p,q)(X)) end: end:  
gee:=proc(p,q): proc(X): subs(seq(vllk=vllk-vllp,k=1..p-1),X) end: end:  
kee:=proc(p,q): E(add(ullk,k=1..p+q))(vllp) end:
```

```
Fee:=proc(p,q): proc(S): [seq(fee(p,q)(op(s,S)),s=1..nops(S))] end: end:  
Gee:=proc(p,q): proc(S): [seq(gee(p,q)(op(s,S)),s=1..nops(S))] end: end:
```

```
Gluu:=proc(S1,S2,S3): seq(seq( op(s1,S1)*op(s2,S2)*S3, s1=1..nops(S1)),s2=1..nops(S2)) end:
```

```
seketel:=proc(r) option remember; if r=0 then [1] elif r=1 then [E(u1)(v1)]  
else [seq( Gluu(Gee(r-k,k)(seketel(r-1-k)),Fee(r-k,k)(seketel(k)),kee(r-k,k)), k=0..r-1)] fi end:
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```
seketel_1:= ## lprint(seketel(1));  
[E(u1)(v1)] : ##
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```
seketel_2:= ## lprint(seketel(2));  
[E(u1)(v1-v2)*E(u1+u2)(v2),  
E(u2)(v2-v1)*E(u1+u2)(v1)] : ##
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```
seketel_3:= ## lprint(seketel(3));  
[E(u1)(v1-v2)*E(u1+u2)(v2-v3)*E(u1+u2+u3)(v3),  
E(u2)(v2-v1)*E(u1+u2)(v1-v3)*E(u1+u2+u3)(v3),  
E(u1)(v1-v2)*E(u3)(v3-v2)*E(u1+u2+u3)(v2),  
E(u2)(v2-v3)*E(u2+u3)(v3-v1)*E(u1+u2+u3)(v1),  
E(u3)(v3-v2)*E(u2+u3)(v2-v1)*E(u1+u2+u3)(v1)] : ##
```

```
seketel_4:= ## lprint(seketel(4));  
[E(u1)(v1-v2)*E(u1+u2)(v2-v3)*E(u1+u2+u3)(v3-v4)*E(u1+u2+u3+u4)(v4),  
E(u2)(v2-v1)*E(u1+u2)(v1-v3)*E(u1+u2+u3)(v3-v4)*E(u1+u2+u3+u4)(v4),  
E(u1)(v1-v2)*E(u3)(v3-v2)*E(u1+u2+u3)(v2-v4)*E(u1+u2+u3+u4)(v4),  
E(u2)(v2-v3)*E(u2+u3)(v3-v1)*E(u1+u2+u3)(v1-v4)*E(u1+u2+u3+u4)(v4),  
E(u3)(v3-v2)*E(u2+u3)(v2-v1)*E(u1+u2+u3)(v1-v4)*E(u1+u2+u3+u4)(v4),  
E(u1)(v1-v2)*E(u1+u2)(v2-v3)*E(u4)(v4-v3)*E(u1+u2+u3+u4)(v3),  
E(u2)(v2-v1)*E(u1+u2)(v1-v3)*E(u4)(v4-v3)*E(u1+u2+u3+u4)(v3),  
E(u1)(v1-v2)*E(u3)(v3-v4)*E(u3+u4)(v4-v2)*E(u1+u2+u3+u4)(v2),  
E(u1)(v1-v2)*E(u4)(v4-v3)*E(u3+u4)(v3-v2)*E(u1+u2+u3+u4)(v2),  
E(u2)(v2-v3)*E(u2+u3)(v3-v4)*E(u2+u3+u4)(v4-v1)*E(u1+u2+u3+u4)(v1),  
E(u3)(v3-v2)*E(u2+u3)(v2-v4)*E(u2+u3+u4)(v4-v1)*E(u1+u2+u3+u4)(v1),  
E(u2)(v2-v3)*E(u1+u2)(v2-v3)*E(u4)(v4-v3)*E(u2+u3+u4)(v3-v1)*E(u1+u2+u3+u4)(v1),  
E(u3)(v3-v4)*E(u3+u4)(v4-v2)*E(u2+u3+u4)(v2-v1)*E(u1+u2+u3+u4)(v1),  
E(u4)(v4-v3)*E(u3+u4)(v3-v2)*E(u2+u3+u4)(v2-v1)*E(u1+u2+u3+u4)(v1)] : ##
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```
seketel_5:= ## lprint(seketel(5));  
[E(u1)(v1-v2)*E(u1+u2)(v2-v3)*E(u1+u2+u3)(v3-v4)*E(u1+u2+u3+u4)(v4-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u2)(v2-v1)*E(u1+u2)(v1-v3)*E(u1+u2+u3)(v3-v4)*E(u1+u2+u3+u4)(v4-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u1)(v1-v2)*E(u3)(v3-v2)*E(u1+u2+u3)(v2-v4)*E(u1+u2+u3+u4)(v4-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u2)(v2-v3)*E(u2+u3)(v3-v1)*E(u1+u2+u3)(v1-v4)*E(u1+u2+u3+u4)(v4-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u3)(v3-v2)*E(u2+u3)(v2-v1)*E(u1+u2+u3)(v1-v4)*E(u1+u2+u3+u4)(v4-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u1)(v1-v2)*E(u1+u2)(v2-v3)*E(u4)(v4-v3)*E(u1+u2+u3+u4)(v3-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u2)(v2-v1)*E(u1+u2)(v1-v3)*E(u4)(v4-v3)*E(u1+u2+u3+u4)(v3-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u1)(v1-v2)*E(u3)(v3-v4)*E(u3+u4)(v4-v2)*E(u1+u2+u3+u4)(v2-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u1)(v1-v2)*E(u4)(v4-v3)*E(u3+u4)(v3-v2)*E(u1+u2+u3+u4)(v2-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u2)(v2-v3)*E(u2+u3)(v3-v4)*E(u2+u3+u4)(v4-v1)*E(u1+u2+u3+u4)(v1-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u3)(v3-v2)*E(u2+u3)(v2-v4)*E(u2+u3+u4)(v4-v1)*E(u1+u2+u3+u4)(v1-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u2)(v2-v3)*E(u1+u2)(v2-v3)*E(u4)(v4-v3)*E(u2+u3+u4)(v3-v1)*E(u1+u2+u3+u4)(v1-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u3)(v3-v4)*E(u3+u4)(v4-v2)*E(u2+u3+u4)(v2-v1)*E(u1+u2+u3+u4)(v1-v5)*E(u1+u2+u3+u4+u5)(v5),  
E(u4)(v4-v3)*E(u3+u4)(v3-v2)*E(u2+u3+u4)(v2-v1)*E(u1+u2+u3+u4)(v1-v5)*E(u1+u2+u3+u4+u5)(v5),
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