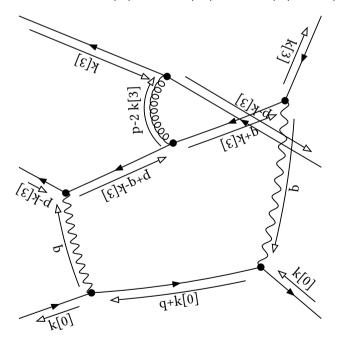
## embedding 1[2, -2, -2, -4] with multiplicity 2

#### initial

```
Denominator:
```

```
prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p-2 k[3]]^-1 prop[0,p+q-k[3]]^-1
```

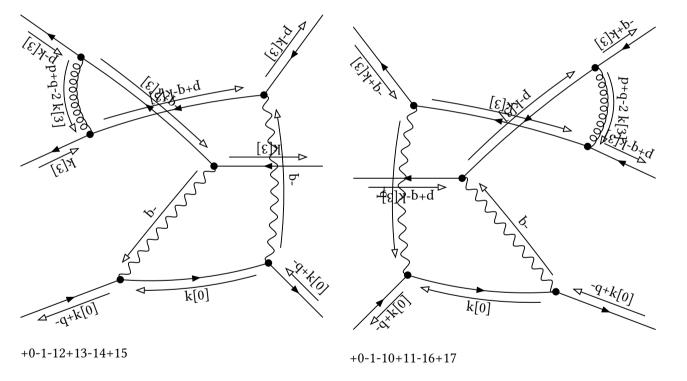
```
-(2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p-k[3]]^-1 dot[p,p]^-1
+(2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p+q-k[3]]^-1 dot[p,p]^-1
-(2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p+q-k[3]]^-1 dot[p,p]^-1
+(2 dot[p,q]+2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p+q-k[3]]^-1 dot[p,p]^-1
+2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p-2 k[3]]^-1 dot[p,p]^-1
-(1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,p-2 k[3]]^-1 prop[0,p+q-k[3]]^-1 dot[p,p]^-1
+2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p-2 k[3]]^-1 dot[p,p]^-1
-(1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p+q-k[3]]^-1 dot[p,p]^-1
+2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,p-k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p+q-k[3]]^-1 dot[p,p]^-1
```



+2-3-10+11-12+13

### Denominator:

prop[0,k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,-q+k[3]]^-1 prop[0,p+q-k[3]]^-1 prop[0,p+q-2 k[3]]^-1



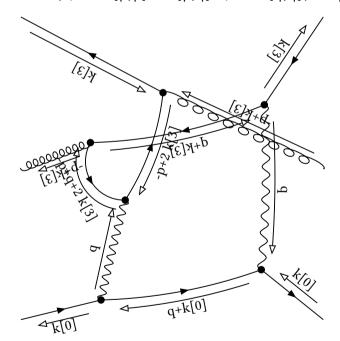
## embedding 2[2, 0, -4, -2] with multiplicity 2

#### initial

Denominator:

prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p+k[3]]^-1 prop[0,-p+2 k[3]]^-1 prop[0,-p+q+2 k[3]]^-1

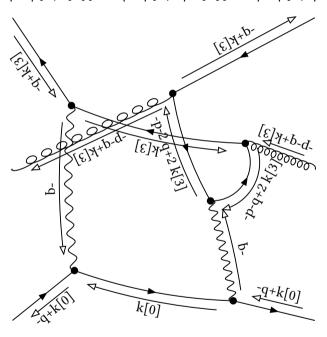
```
-(dot[p,q]+1/2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p+2 k[3]]^-1 dot[p,p]^-1
+(dot[p,q]+1/2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p+q+2 k[3]]^-1 dot[p,p]^-1
+2 (dot[p,q]+1/2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,-p+2 k[3]]^-1 prop[0,-p+q+2 k[3]]^-1 dot[p,p]^-1
-2 (dot[p,q]+1/2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,-p+2 k[3]]^-1 prop[0,-p+q+2 k[3]]^-1 dot[p,p]^-1
+1/2 (1/2 dot[p,p]+dot[p,q]+1/2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p+k[3]]^-1 dot[p,p]^-1
-(1/2 dot[p,p]+dot[p,q]+1/2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,-p+k[3]]^-1 prop[0,-p+q+2 k[3]]^-1 dot[p,p]^-1
-(1/2 dot[p,p]+dot[p,q]+1/2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,-p+k[3]]^-1 prop[0,-p+2 k[3]]^-1 dot[p,p]^-1
+2 (1/2 dot[p,p]+dot[p,q]+1/2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,-p+2 k[3]]^-1 prop[0,-p+q+2 k[3]]^-1 dot[p,p]^-1
+2 (1/2 dot[p,p]+dot[p,q]+1/2 dot[q,q])^-1 prop[0,-p+k[3]]^-1 prop[0,-p+2 k[3]]^-1 prop[0,-p+q+2 k[3]]^-1 dot[p,p]^-1
```



+2-3+8-9-12+13

Denominator:

prop[0,k[3]]^-1 prop[0,-q+k[3]]^-1 prop[0,-p-q+k[3]]^-1 prop[0,-p-q+2 k[3]]^-1 prop[0,-p-2 q+2 k[3]]^-1



+0-1+8-9-16+17

# embedding 3 [2, 0, -2, -2] with multiplicity 2

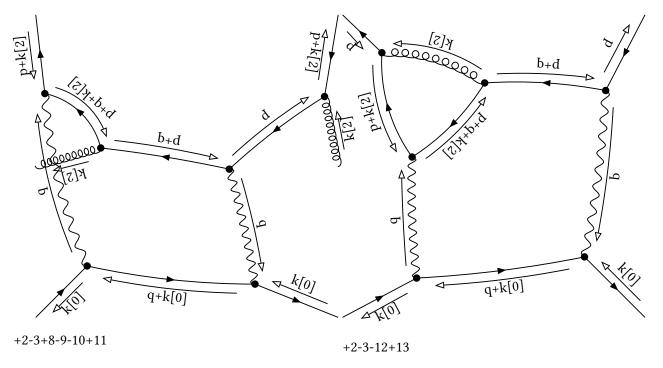
## initial

Denominator:

prop[0,p]^-1 prop[0,k[2]]^-1 prop[0,p+q]^-1 prop[0,p+k[2]]^-1 prop[0,p+q+k[2]]^-1

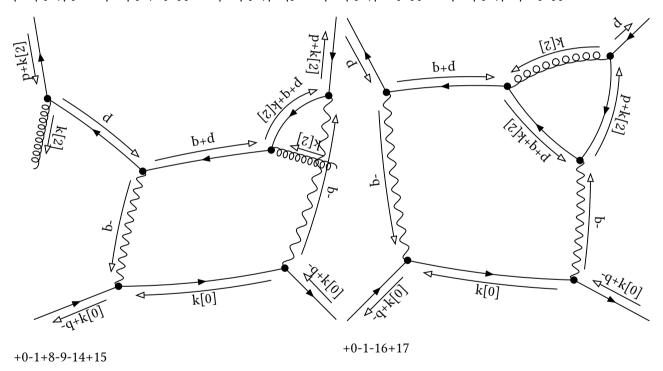
Partial Fractioned Denominator:

 $(\mathsf{dot}[\mathsf{p},\mathsf{p}] + 2 \ \mathsf{dot}[\mathsf{p},\mathsf{q}] + \mathsf{dot}[\mathsf{q},\mathsf{q}])^{-1} \ \mathsf{prop}[\mathsf{0},\mathsf{k}[\mathsf{2}]]^{-1} \ \mathsf{prop}[\mathsf{0},\mathsf{p} + \mathsf{k}[\mathsf{2}]]^{-1} \ \mathsf{prop}[\mathsf{0},\mathsf{p} + \mathsf{q} + \mathsf{k}[\mathsf{2}]]^{-1} \ \mathsf{dot}[\mathsf{p},\mathsf{p}]^{-1}$ 



final

prop[0,p]^-1 prop[0,k[2]]^-1 prop[0,p+q]^-1 prop[0,p+k[2]]^-1 prop[0,p+q+k[2]]^-1



# embedding 4 [2, 0, -2, 0] with multiplicity 2

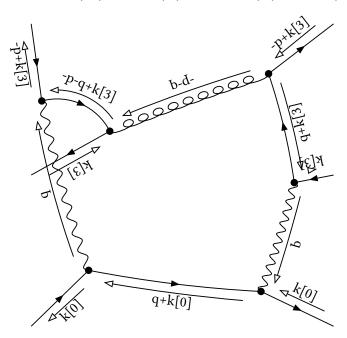
### initial

Denominator:

prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p+k[3]]^-1 prop[0,-p-q]^-1 prop[0,-p-q+k[3]]^-1

Partial Fractioned Denominator:

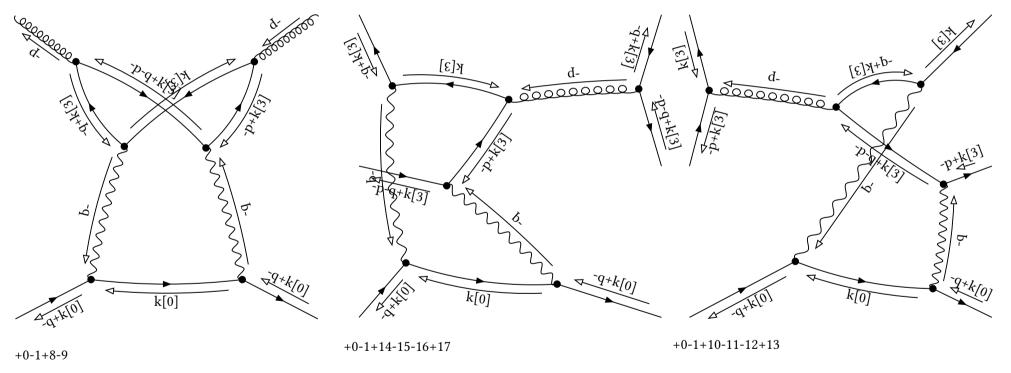
(2 dot[p,q]+2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p+k[3]]^-1 -(2 dot[p,q]+2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p-q+k[3]]^-1 +(2 dot[p,q]+2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,-p+k[3]]^-1 prop[0,-p-q+k[3]]^-1 -(2 dot[p,q]+2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,-p+k[3]]^-1 prop[0,-p-q+k[3]]^-1



+2-3-12+13+14-15

final

prop[0,k[3]]^-1 prop[0,-p]^-1 prop[0,-p+k[3]]^-1 prop[0,-q+k[3]]^-1 prop[0,-p-q+k[3]]^-1



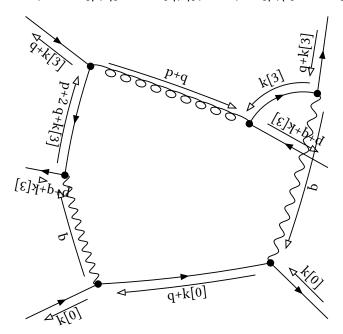
# embedding 5 [2, 0, 2, 0] with multiplicity 2

### initial

Denominator:

prop[0,k[3]]^-1 prop[0,p+q]^-1 prop[0,q+k[3]]^-1 prop[0,p+q+k[3]]^-1 prop[0,p+2 q+k[3]]^-1

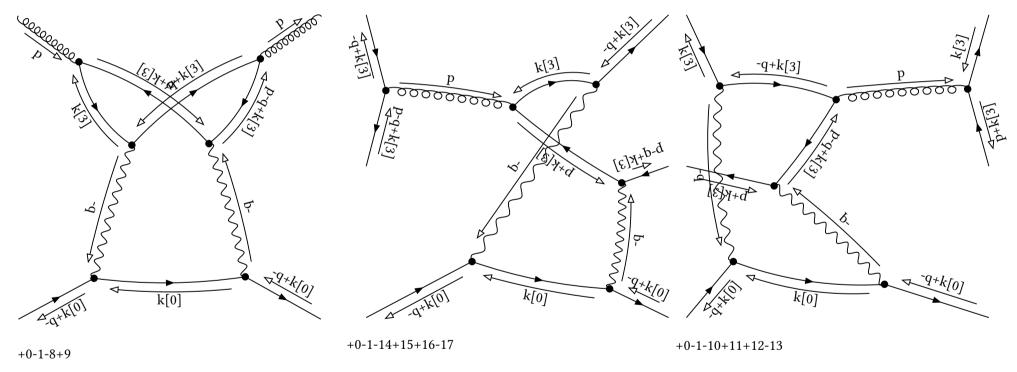
```
-(-2 dot[p,q]-2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p+q+k[3]]^-1 +(-2 dot[p,q]-2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p+2 q+k[3]]^-1 +(-2 dot[p,q]-2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,p+q+k[3]]^-1 prop[0,p+2 q+k[3]]^-1 -(-2 dot[p,q]-2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,p+q+k[3]]^-1 prop[0,p+2 q+k[3]]^-1
```



+2-3-10+11+16-17

final

prop[0,p]^-1 prop[0,k[3]]^-1 prop[0,p+k[3]]^-1 prop[0,-q+k[3]]^-1 prop[0,p-q+k[3]]^-1



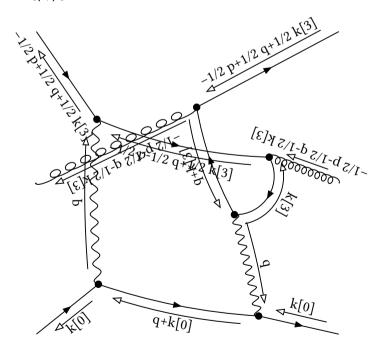
# embedding 6 [2, 2, -2, 2] with multiplicity 2

#### initial

### Denominator:

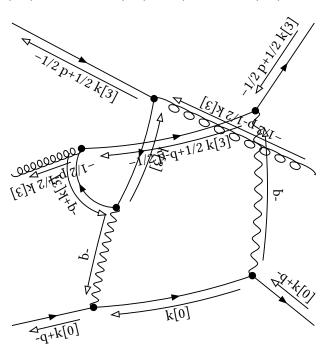
 $prop[0,k[3]]^{-1}$   $prop[0,q+k[3]]^{-1}$   $prop[0,-1/2 p+1/2 q+1/2 k[3]]^{-1}$   $prop[0,-1/2 p-1/2 q+1/2 k[3]]^{-1}$   $prop[0,-1/2 p-1/2 q+1/2 k[3]]^{-1}$ 

- -4 (2 dot[p,q]+dot[q,q])^-1 (-dot[p,p]-2 dot[p,q]-dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-1/2 p+1/2 q+1/2 k[3]]^-1 +4 (2 dot[p,q]+dot[q,q])^-1 (-dot[p,p]-2 dot[p,q]-dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-1/2 p-1/2 q+1/2 k[3]]^-1 (-dot[p,p]-2 dot[p,q]-dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,-1/2 p+1/2 q+1/2 k[3]]^-1 prop[0,-1/2 p-1/2 q+1/2 k[3]]^-1
- $+2 (2 dot[p,q]+dot[q,q])^{-1} (-dot[p,p]-2 dot[p,q]-dot[q,q])^{-1} prop[0,q+k[3]]^{-1} prop[0,-1/2 p+1/2 q+1/2 k[3]]^{-1} prop[0,-1/2 p-1/2 q+1/2 k[3]]^{-1}$
- $-4 (-dot[p,p]-2 dot[p,q]-dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-1/2 p+1/2 q+1/2 k[3]]^-1 dot[p,p]^-1$
- $-4 (-dot[p,p]-2 dot[p,q]-dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-1/2 p-1/2 q-1/2 k[3]]^-1 dot[p,p]^-1$
- $+2 (-dot[p,p]-2 dot[p,q]-dot[q,q])^{-1} prop[0,k[3]]^{-1} prop[0,-1/2 p+1/2 q+1/2 k[3]]^{-1} prop[0,-1/2 p-1/2 q-1/2 k[3]]^{-1} dot[p,p]^{-1}$
- $+2 (-dot[p,p]-2 dot[p,q]-dot[q,q])^{-1} prop[0,q+k[3]]^{-1} prop[0,-1/2 p+1/2 q+1/2 k[3]]^{-1} prop[0,-1/2 p-1/2 q+1/2 k[3]]^{-1} dot[p,p]^{-1}$
- $+2 (-dot[p,p]-2 dot[p,q]-dot[q,q])^{-1} prop[0,q+k[3]]^{-1} prop[0,-1/2 p-1/2 q+1/2 k[3]]^{-1} prop[0,-1/2 p-1/2 q-1/2 k[3]]^{-1} dot[p,p]^{-1}$
- $-(-\mathsf{dot}[\mathsf{p},\mathsf{p}]-2\ \mathsf{dot}[\mathsf{p},\mathsf{q}]-\mathsf{dot}[\mathsf{q},\mathsf{q}])^{-1}\ \mathsf{prop}[0,-1/2\ \mathsf{p}+1/2\ \mathsf{k}[3]]^{-1}\ \mathsf{prop}[0,-1/2\ \mathsf{p}-1/2\ \mathsf{k}[3]]^{-1}\ \mathsf{prop}[0,-1/2\ \mathsf{p}-1/2\ \mathsf{k}[3]]^{-1}\ \mathsf{dot}[\mathsf{p},\mathsf{p}]^{-1}$



Denominator:

prop[0,k[3]]^-1 prop[0,-q+k[3]]^-1 prop[0,-1/2 p+1/2 k[3]]^-1 prop[0,-1/2 p-1/2 k[3]]^-1 prop[0,-1/2 p-q+1/2 k[3]]^-1



+0-1+8-9+10-11

# embedding 7 [2, 2, 0, 2] with multiplicity 2

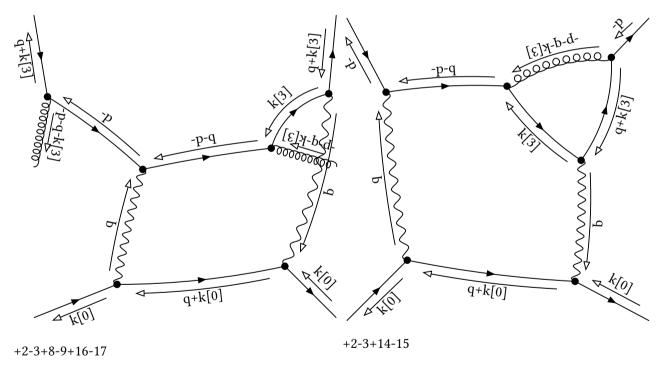
## initial

Denominator:

prop[0,k[3]]^-1 prop[0,-p]^-1 prop[0,q+k[3]]^-1 prop[0,-p-q]^-1 prop[0,-p-q-k[3]]^-1

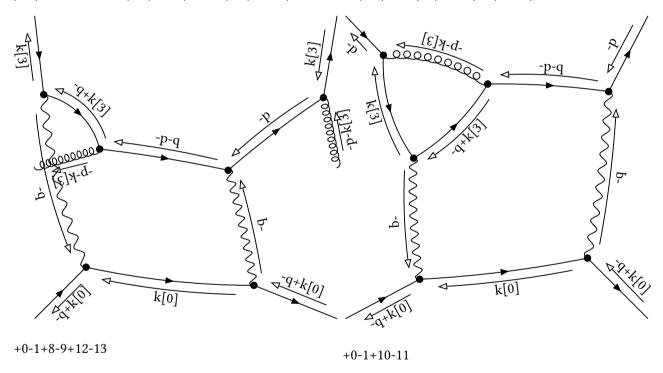
Partial Fractioned Denominator:

 $(dot[p,p]+2 \ dot[p,q]+dot[q,q])^{-1} \ prop[0,k[3]]^{-1} \ prop[0,q+k[3]]^{-1} \ prop[0,-p-q-k[3]]^{-1} \ dot[p,p]^{-1}$ 



Denominator:

prop[0,k[3]]^-1 prop[0,-p]^-1 prop[0,-q+k[3]]^-1 prop[0,-p-q]^-1 prop[0,-p-k[3]]^-1



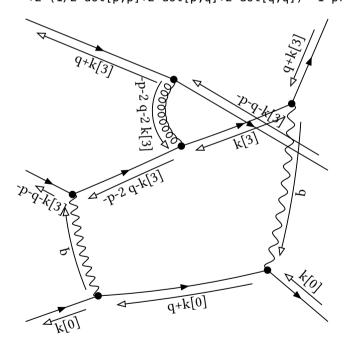
## embedding 8 [2, 2, 2, 4] with multiplicity 2

### initial

Denominator:

```
prop[0,k[3]]^{-1} prop[0,q+k[3]]^{-1} prop[0,-p-q-k[3]]^{-1} prop[0,-p-2 q-k[3]]^{-1} prop[0,-p-2 q-2 k[3]]^{-1}
```

```
1/2 (-2 dot[p,q]-2 dot[q,q])^-1 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p-q-k[3]]^-1 -1/2 (-2 dot[p,q]-2 dot[q,q])^-1 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p-q-k[3]]^-1 -1/2 (-2 dot[p,q]-2 dot[q,q])^-1 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,-p-q-k[3]]^-1 dot[p,p]^-1 +2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,-p-q-k[3]]^-1 dot[p,p]^-1 +2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,-p-q-k[3]]^-1 prop[0,-p-2 q-2 k[3]]^-1 dot[p,p]^-1 +2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,-p-q-k[3]]^-1 prop[0,-p-2 q-2 k[3]]^-1 dot[p,p]^-1 +2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,q+k[3]]^-1 prop[0,-p-2 q-k[3]]^-1 prop[0,-p-2 q-2 k[3]]^-1 dot[p,p]^-1 +2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,-p-q-k[3]]^-1 prop[0,-p-2 q-k[3]]^-1 prop[0,-p-2 q-2 k[3]]^-1 dot[p,p]^-1 +2 (1/2 dot[p,p]+2 dot[p,q]+2 dot[q,q])^-1 prop[0,-p-q-k[3]]^-1 prop[0,-p-2 q-k[3]]^-1 prop[0,-p-2 q-2 k[3]]^-1 dot[p,p]^-1
```



+2-3+14-15+16-17

final

prop[0,k[3]]^-1 prop[0,-q+k[3]]^-1 prop[0,-p-k[3]]^-1 prop[0,-p+q-k[3]]^-1 prop[0,-p+q-2 k[3]]^-1

