## embedding 1 [1, -1, -1, -2]

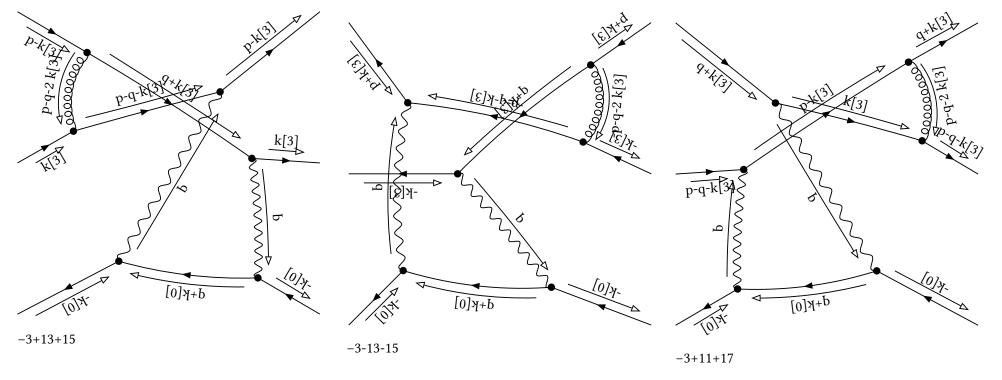
## initial

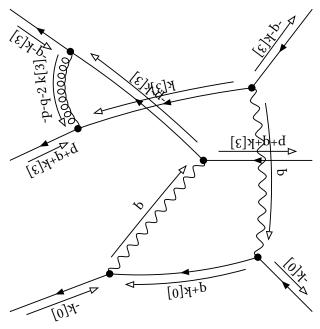
Denominator:

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

Partial Fractioned Denominator:

-1/2 (1/2 dot[p,p]-dot[p,q]+1/2 dot[q,q])^-1 (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 +(1/2 dot[p,p]-dot[p,q]+1/2 dot[q,q])^-1 (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-q-2 k[3]]^-1 +(1/2 dot[p,p]-dot[p,q]+1/2 dot[q,q])^-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-k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p-k[3]]^-1 prop[0,p-q-k[3]]^-1 dot[p,q]^-1 (1/2 dot[p,p]-dot[p,q]+1/2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,p-q-k[3]]^-1 prop[0,p-q-k[3]]^-1 dot[p,q]^-1 (1/2 dot[p,p]-dot[p,q]+1/2 dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,p-q-k[3]]^-1 prop[0,p-q-k[3]]^-1 dot[p,q]^-1 +1/4 (1/2 dot[p,p]-dot[p,q]+1/2 dot[q,q])^-1 prop[0,q-k[3]]^-1 prop[0,p-q-k[3]]^-1 dot[p,q]^-1 +1/4 (1/2 dot[p,p]-dot[p,q]+1/2 dot[q,q])^-1 prop[0,q-k[3]]^-1 prop[0,p-q-k[3]]^-1 dot[p,q]^-1

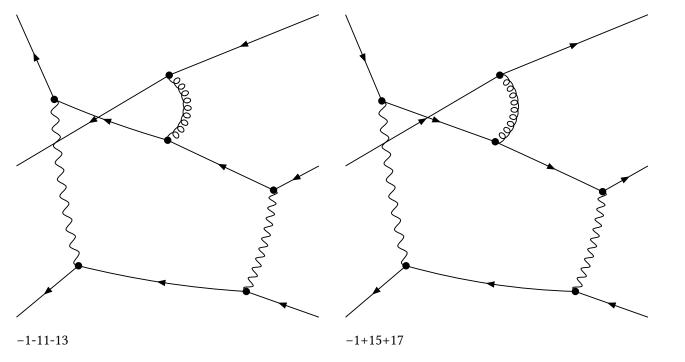




-3-11-17

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



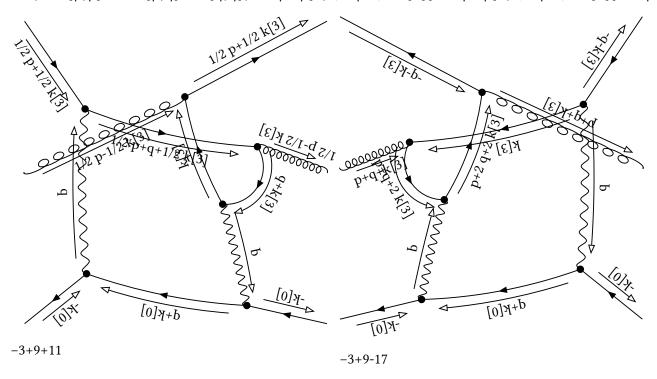
## embedding 2 [1, 0, -2, -1]

### initial

Denominator:

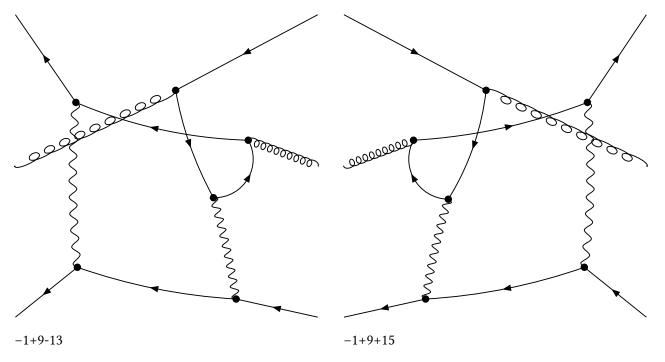
 $prop[0,k[3]]^{-1} prop[0,q+k[3]]^{-1} prop[0,1/2 p+1/2 k[3]]^{-1} prop[0,1/2 p-1/2 k[3]]^{-1} prop[0,1/2 p+q+1/2 k[3]]^{-1}$ 

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



Denominator:

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



## embedding 3 [1, 0, -1, -2]

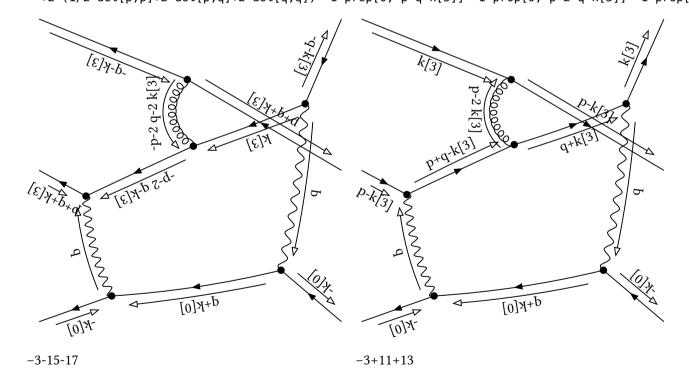
### initial

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

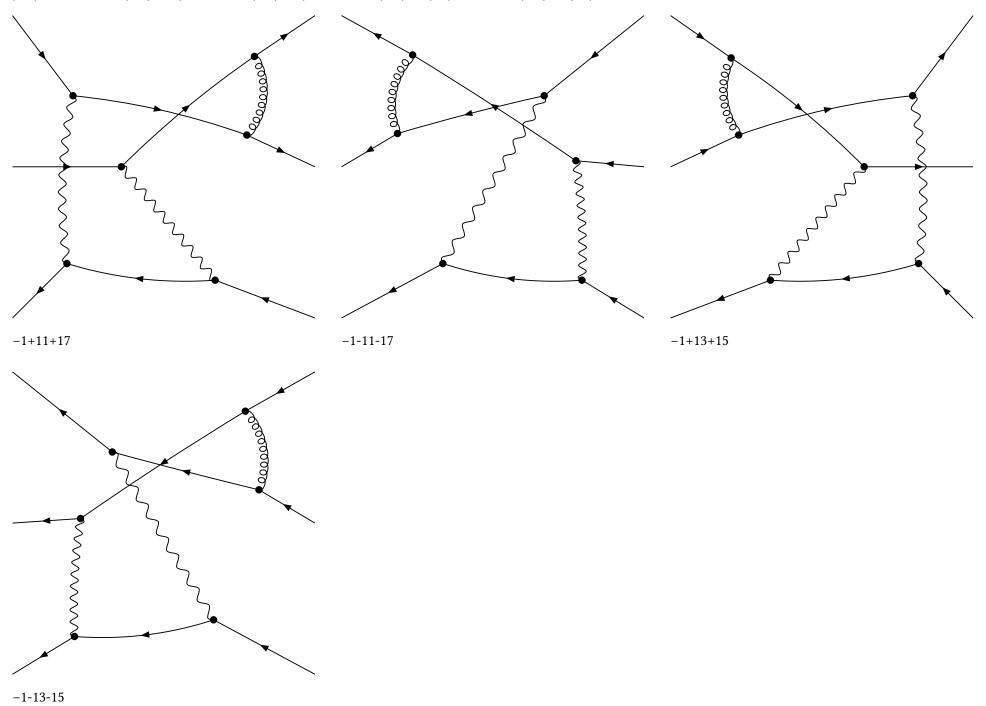
#### Partial Fractioned Denominator:

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



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



# embedding 4 [1, 0, -1, -1]

## initial

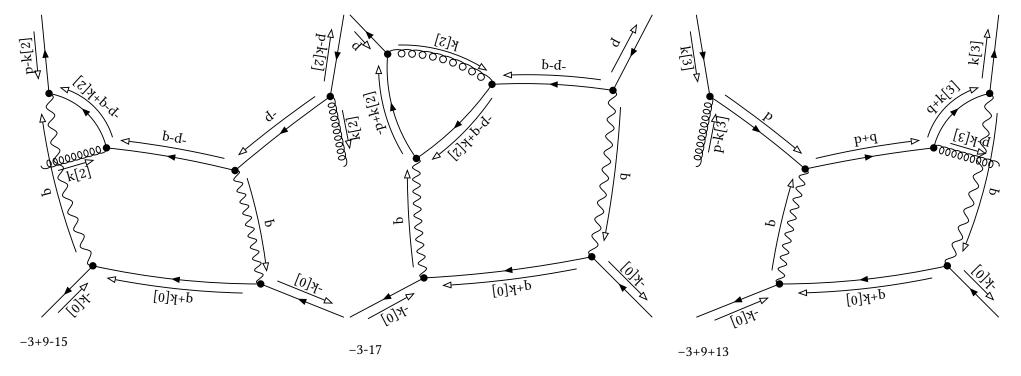
-3+11

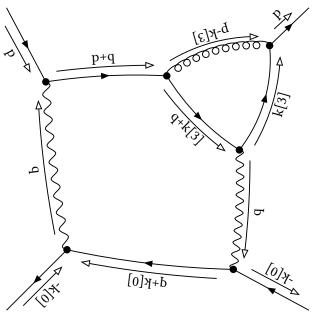
Denominator:

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

Partial Fractioned Denominator:

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



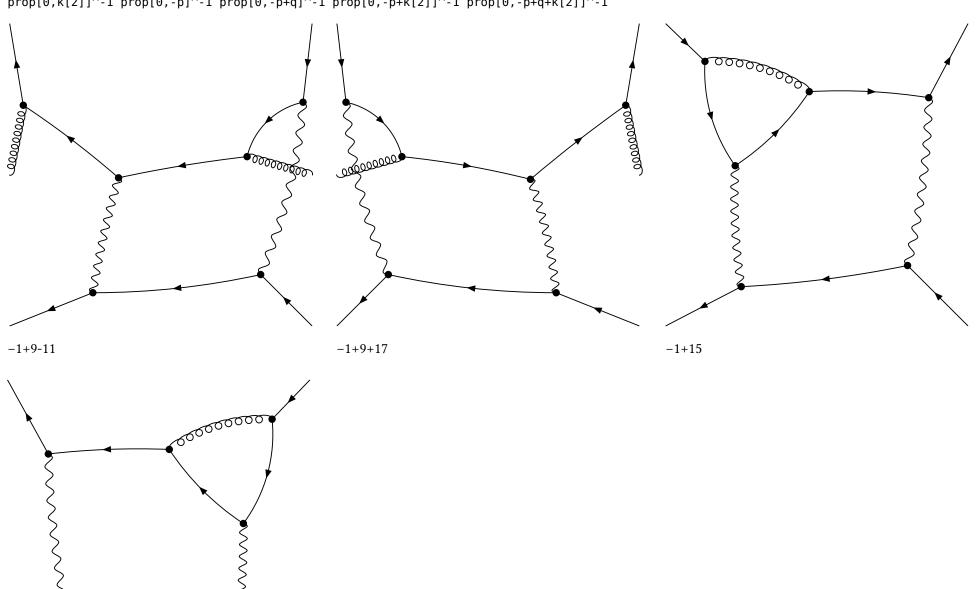


final

-1-13

Denominator:

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



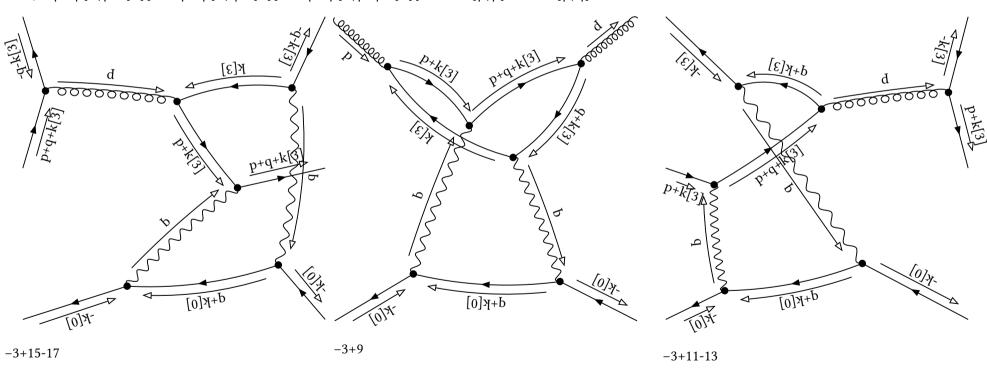
# embedding 5 [1, 0, -1, 0]

## initial

Denominator:

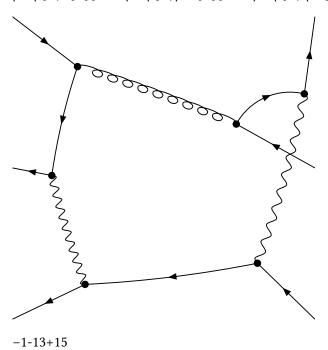
prop[0,p]^-1 prop[0,k[3]]^-1 prop[0,p+k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p+q+k[3]]^-1

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



# embedding 6 [1, 0, 0, -1]

## initial

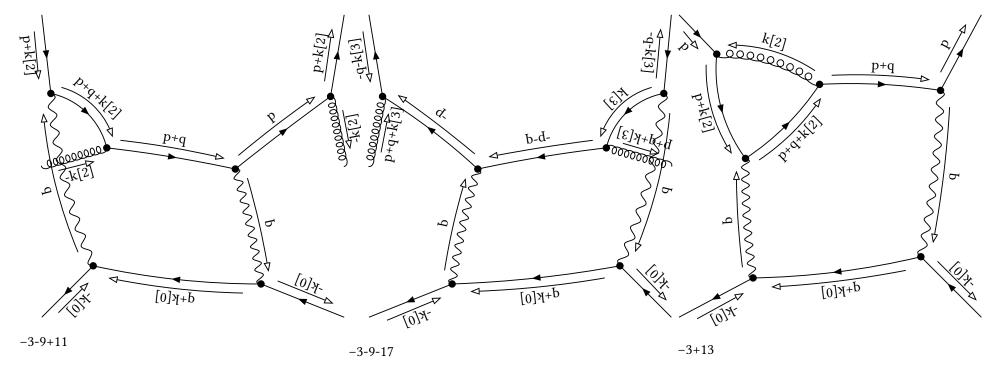
-3-15

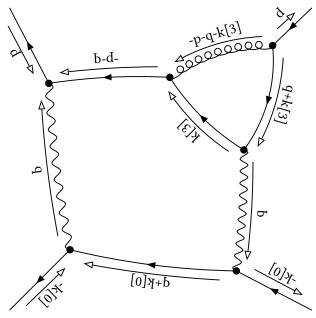
Denominator:

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:

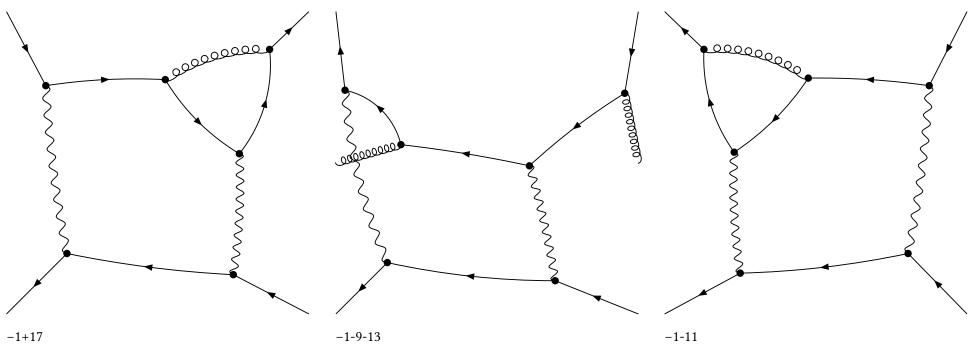
 $(\mathsf{dot}[\mathsf{p},\mathsf{p}] + 2 \ \mathsf{dot}[\mathsf{p},\mathsf{q}] + \mathsf{dot}[\mathsf{q},\mathsf{q}])^- 1 \ \mathsf{prop}[\mathsf{0},\mathsf{k}[2]]^- 1 \ \mathsf{prop}[\mathsf{0},\mathsf{p}+\mathsf{k}[2]]^- 1 \ \mathsf{prop}[\mathsf{0},\mathsf{p}+\mathsf{q}+\mathsf{k}[2]]^- 1 \ \mathsf{dot}[\mathsf{p},\mathsf{p}]^-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

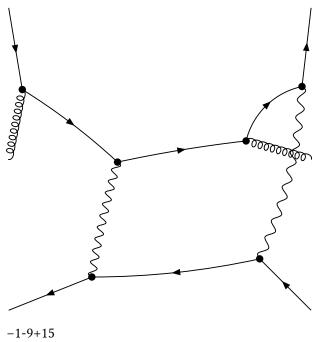




final

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





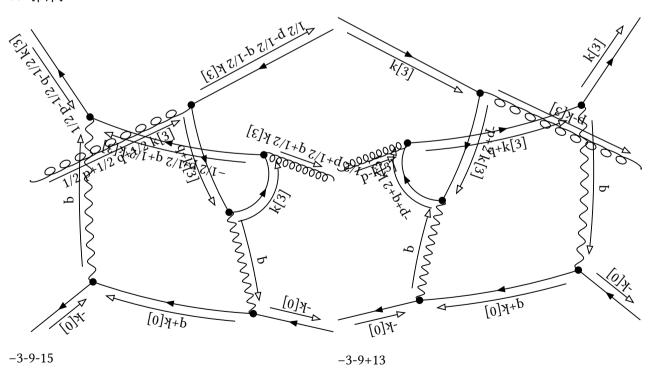
# embedding 7 [1, 0, 1, -1]

### initial

Denominator:

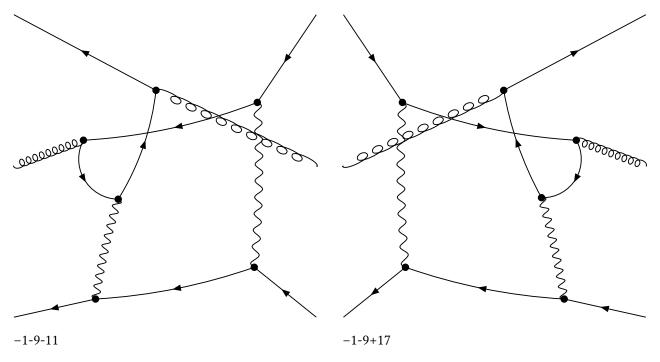
 $prop[0,k[3]]^{-1}$   $prop[0,q+k[3]]^{-1}$   $prop[0,-1/2 p+1/2 q+1/2 k[3]]^{-1}$   $prop[0,-1/2 p-1/2 q+1/2 k[3]]^{-1}$ 

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



final

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



# embedding 8 [1, 0, 1, 0]

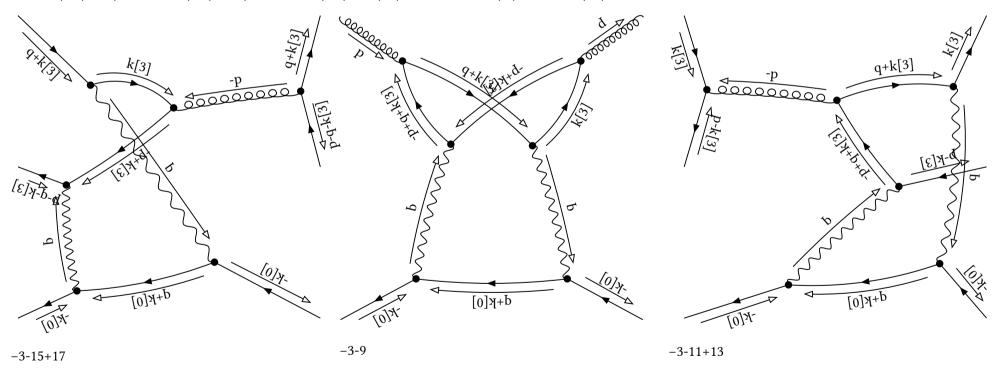
## initial

Denominator:

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

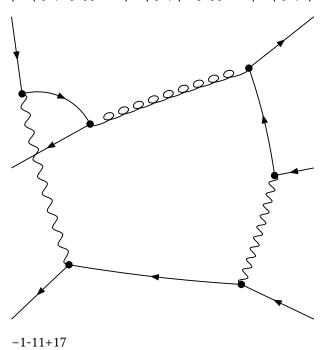
Partial Fractioned Denominator:

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



Denominator:

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



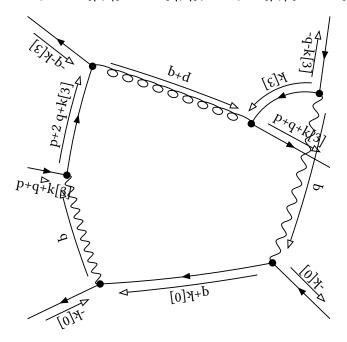
# embedding 9 [1, 1, -1, 0]

### 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

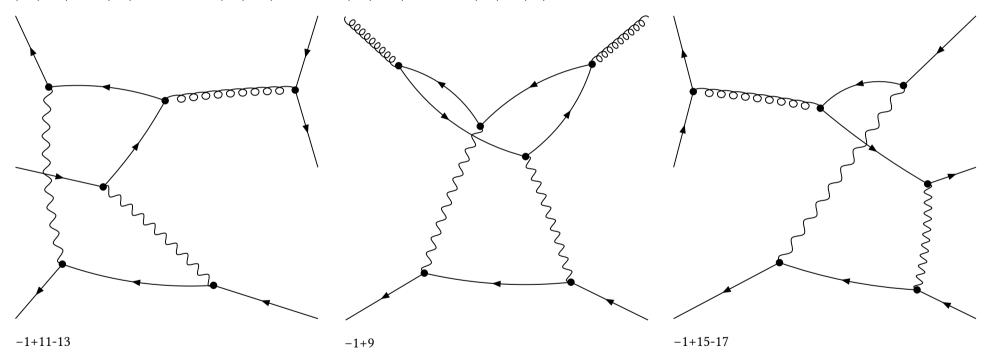
```
-(-2 dot[p,q]-2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p+q+k[3]]^-1 +(-2 dot[p,q]-2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1 prop[0,k[3]]^-1 prop[0,q+k[3]]^-1 prop[0,p+2 q+k[3]]^-1 +(-2 dot[p,q]-2 dot[q,q])^-1 (dot[p,p]+2 dot[p,q]+dot[q,q])^-1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



-3+11-17

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 10 [1, 1, 1, 0]

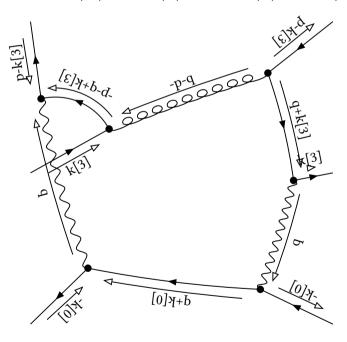
## initial

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



-3+13-15

final

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

