

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

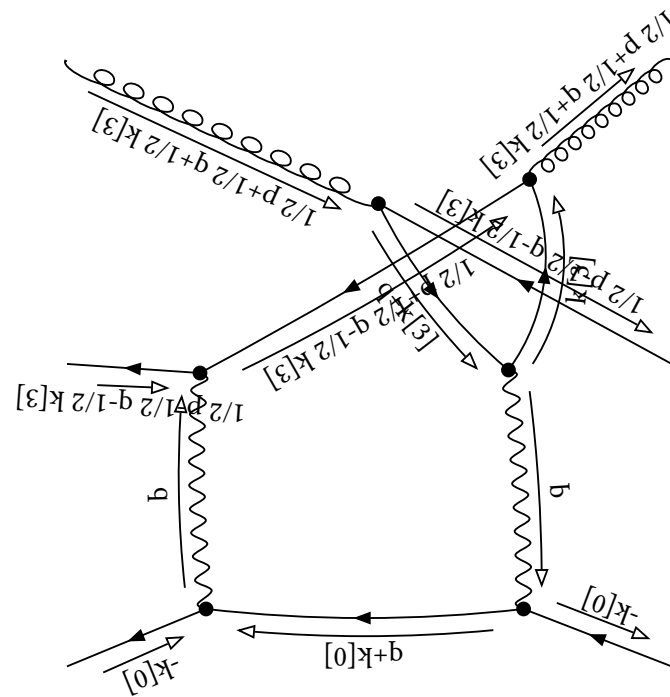
### initial

Denominator:

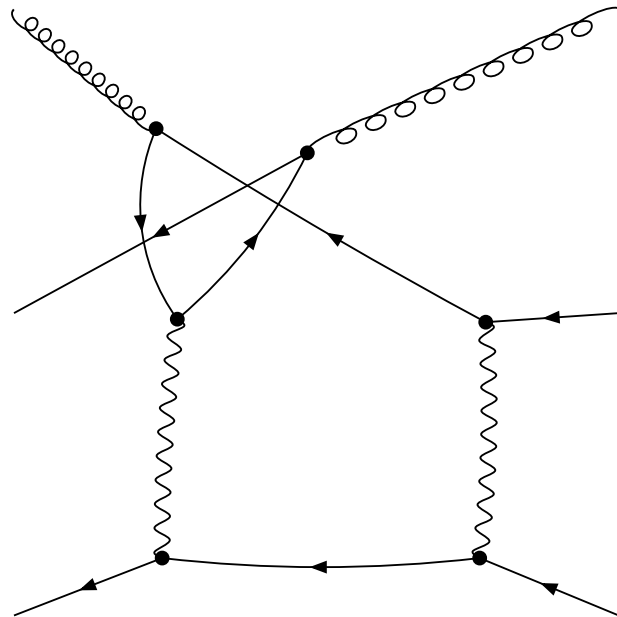
$$\text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, 1/2 p+1/2 q+1/2 k[3]]^{-1} \text{prop}[0, 1/2 p+1/2 q-1/2 k[3]]^{-1} \text{prop}[0, 1/2 p-1/2 q-1/2 k[3]]^{-1}$$

Partial Fractioned Denominator:

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



**final**



$-1+8+16$

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

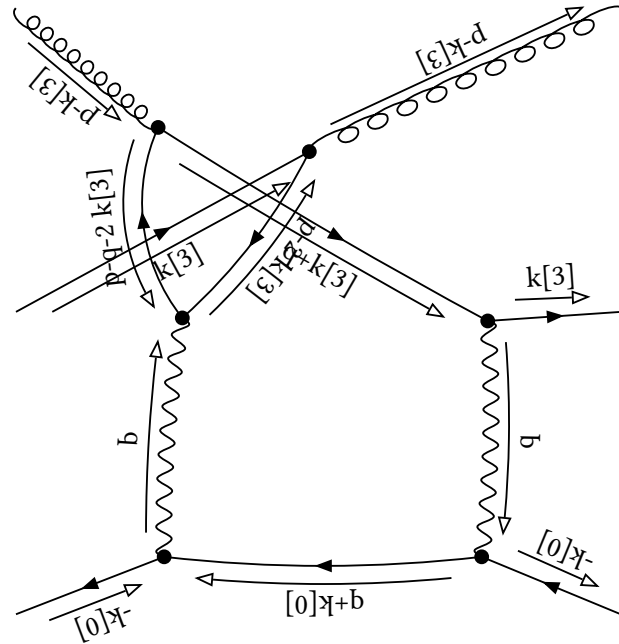
### initial

Denominator:

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

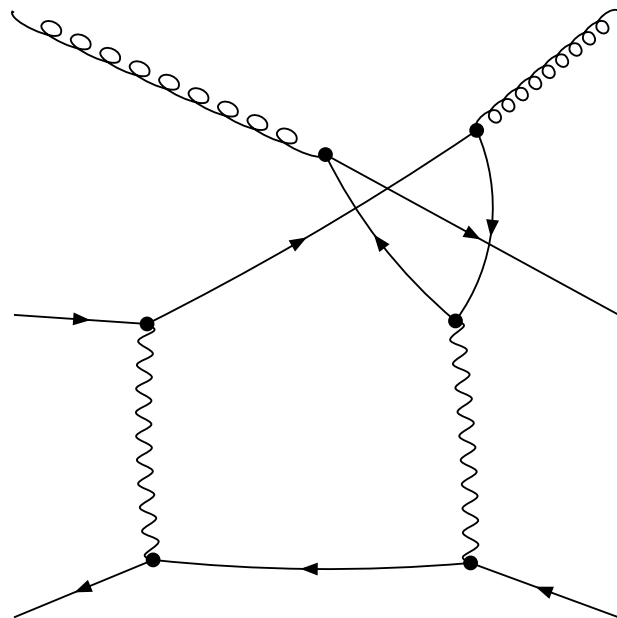
Partial Fractioned Denominator:

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



$$-3+13+16$$

**final**



$-1+15+16$

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

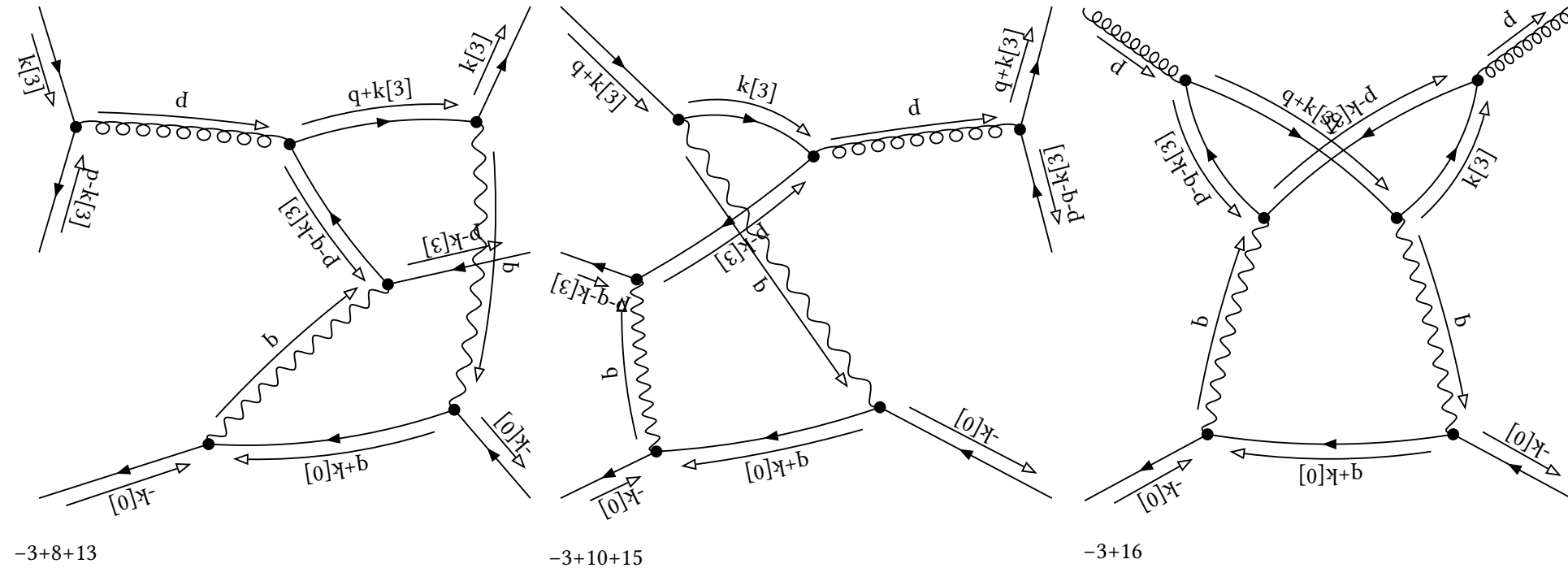
### initial

Denominator:

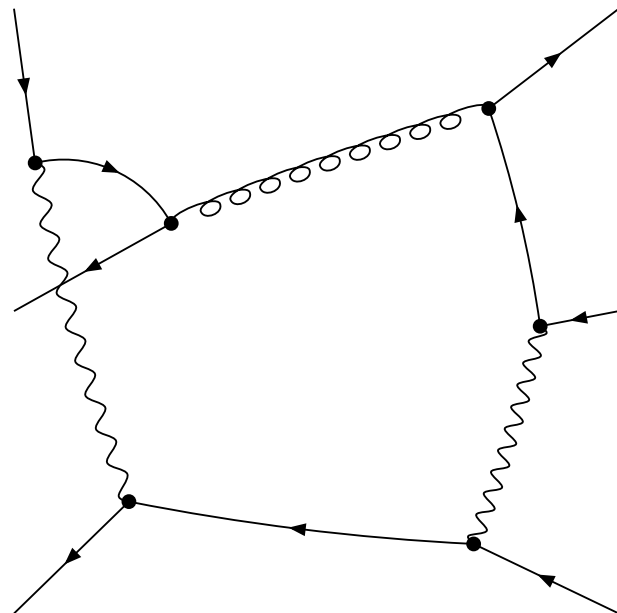
$$\text{prop}[0,p]^{-1} \text{prop}[0,k[3]]^{-1} \text{prop}[0,q+k[3]]^{-1} \text{prop}[0,p-k[3]]^{-1} \text{prop}[0,p-q-k[3]]^{-1}$$

Partial Fractioned Denominator:

$$\begin{aligned} & -1/2 \text{prop}[0,k[3]]^{-1} \text{prop}[0,q+k[3]]^{-1} \text{prop}[0,p-k[3]]^{-1} \text{dot}[p,p]^{-1} \text{dot}[p,q]^{-1} \\ & +1/2 \text{prop}[0,k[3]]^{-1} \text{prop}[0,q+k[3]]^{-1} \text{prop}[0,p-q-k[3]]^{-1} \text{dot}[p,p]^{-1} \text{dot}[p,q]^{-1} \\ & +1/2 \text{prop}[0,k[3]]^{-1} \text{prop}[0,p-k[3]]^{-1} \text{prop}[0,p-q-k[3]]^{-1} \text{dot}[p,p]^{-1} \text{dot}[p,q]^{-1} \\ & -1/2 \text{prop}[0,q+k[3]]^{-1} \text{prop}[0,p-k[3]]^{-1} \text{prop}[0,p-q-k[3]]^{-1} \text{dot}[p,p]^{-1} \text{dot}[p,q]^{-1} \end{aligned}$$



**final**



-1+8+15

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

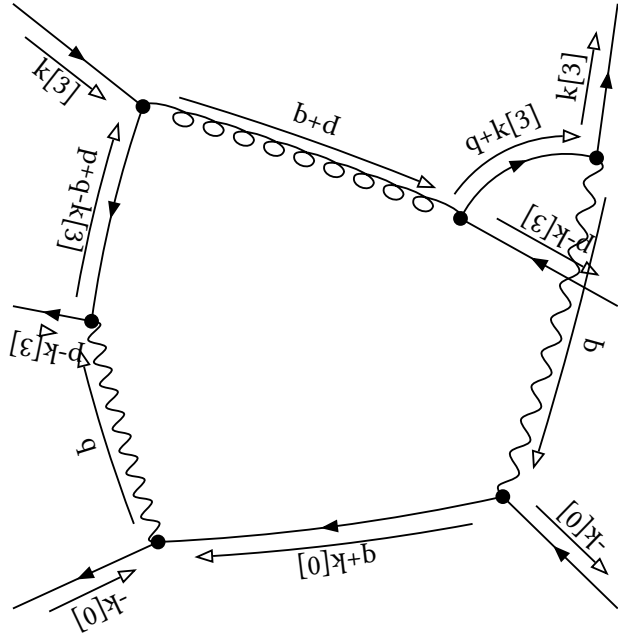
### initial

Denominator:

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

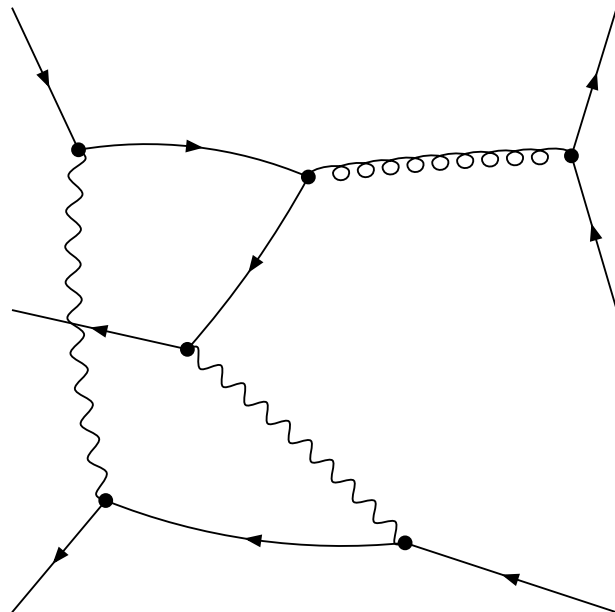
Partial Fractioned Denominator:

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

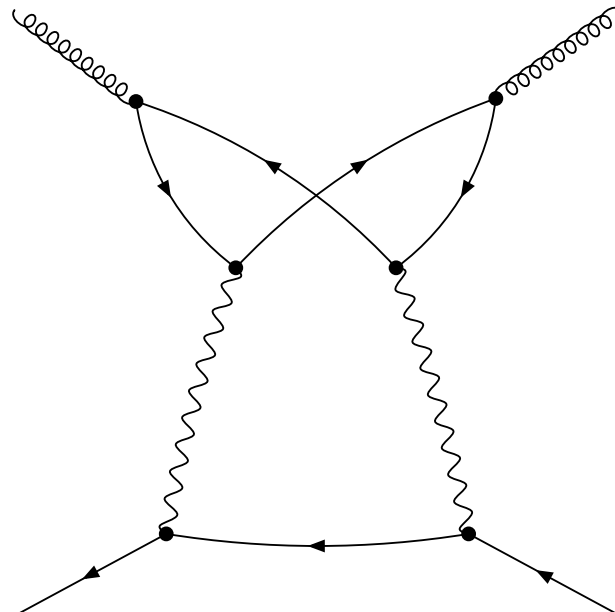


-3+10+13

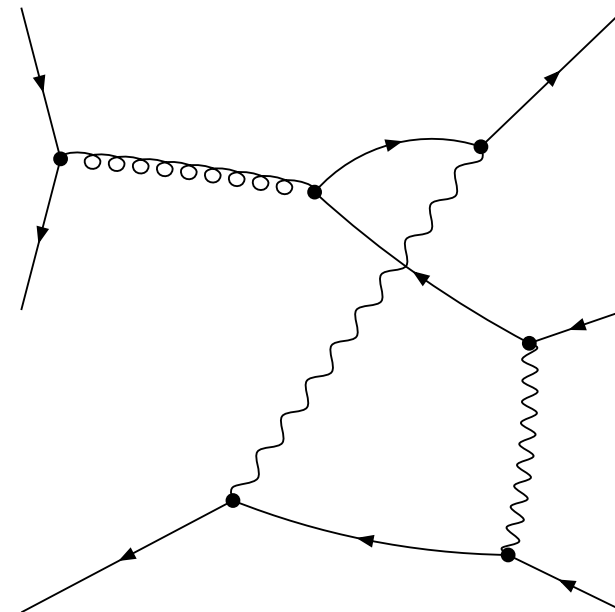
**final**



-1+10+15



-1+16



-1+8+13



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

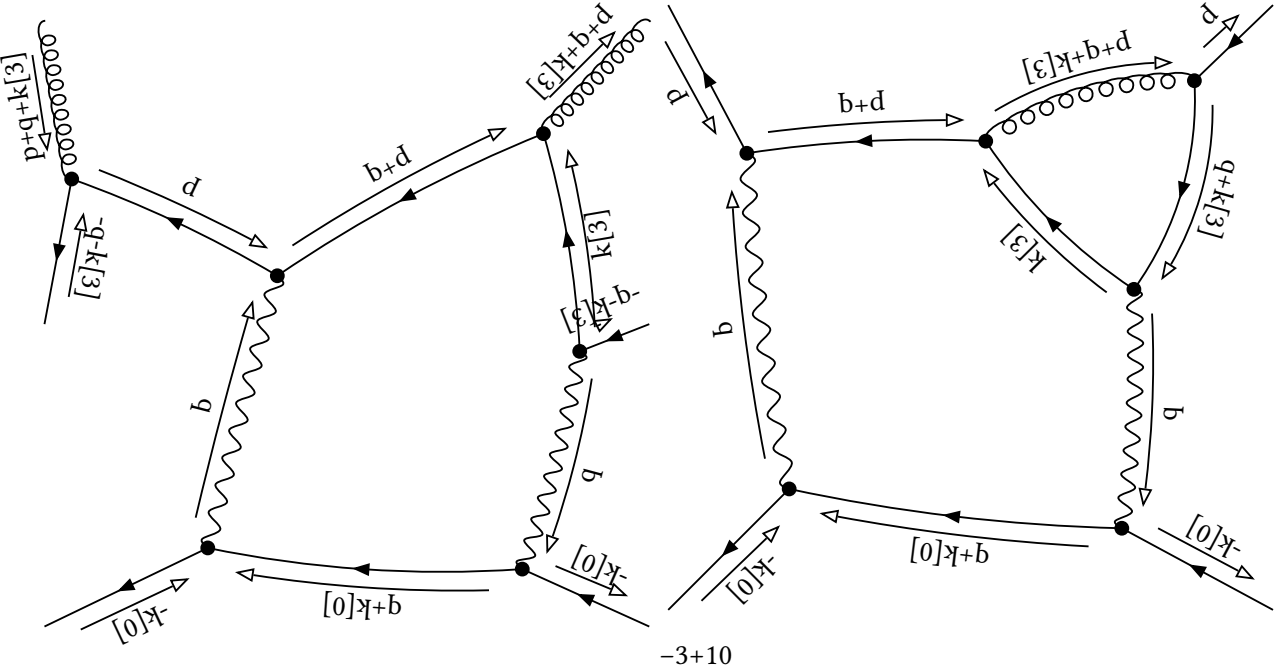
initial

Denominator:

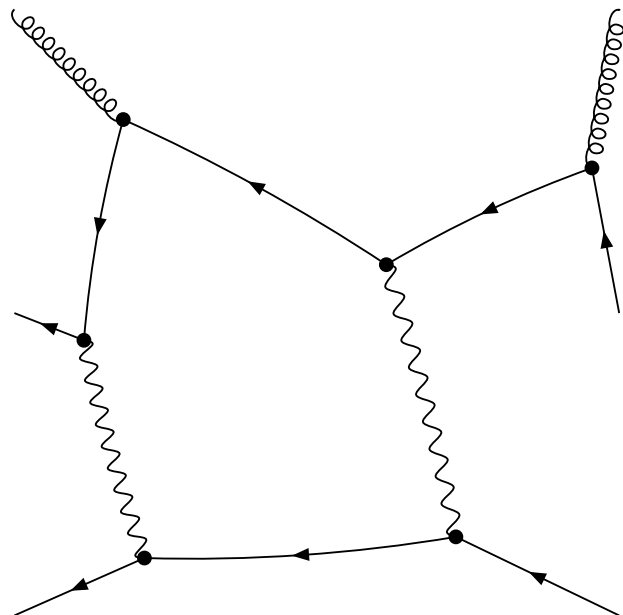
$\text{prop}[0,p]^{-1} \text{prop}[0,k[3]]^{-1} \text{prop}[0,p+q]^{-1} \text{prop}[0,q+k[3]]^{-1} \text{prop}[0,p+q+k[3]]^{-1}$

Partial Fractioned Denominator:

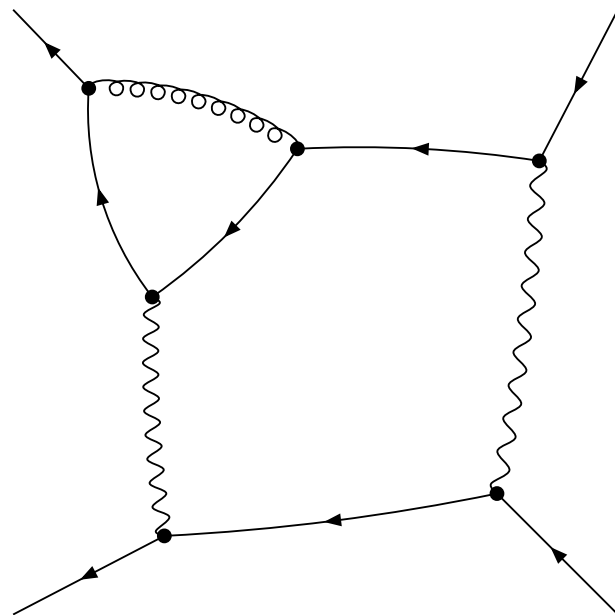
$(\text{dot}[p,p]+2 \text{dot}[p,q]+\text{dot}[q,q])^{-1} \text{prop}[0,k[3]]^{-1} \text{prop}[0,q+k[3]]^{-1} \text{prop}[0,p+q+k[3]]^{-1} \text{dot}[p,p]^{-1}$



**final**



$-1-13+16$



$-1+8$

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

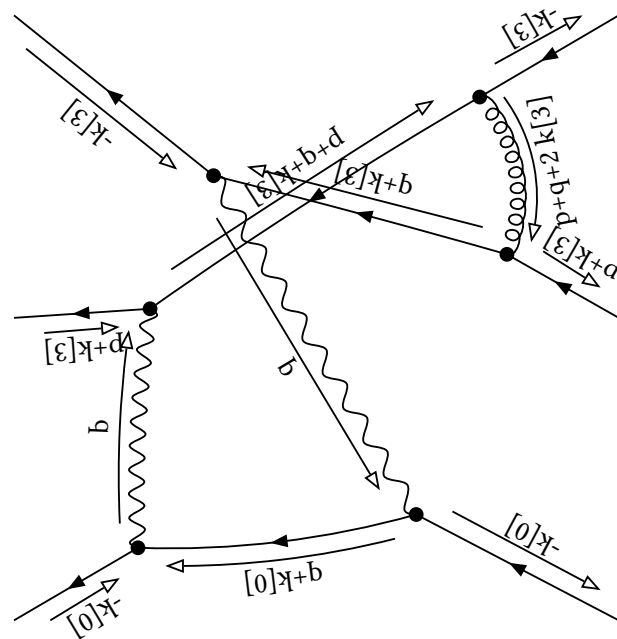
### initial

Denominator:

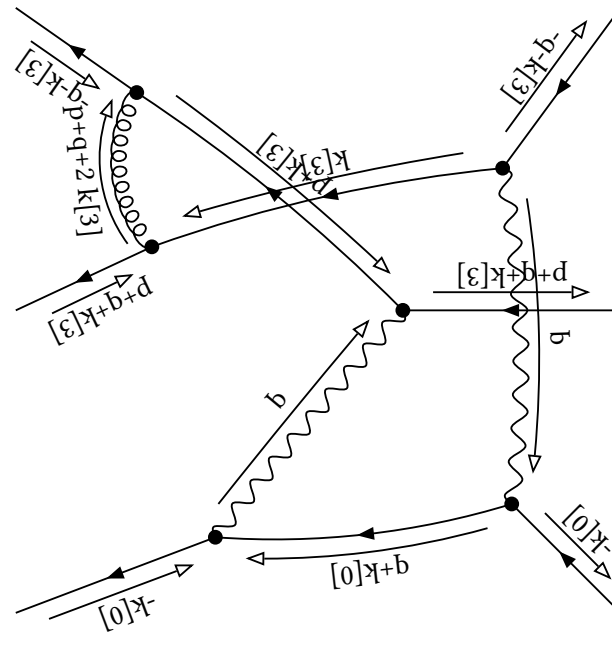
$$\text{prop}[0, k[3]]^{-1} \text{prop}[0, p+k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1}$$

Partial Fractioned Denominator:

$$\begin{aligned} & -1/2 (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, p+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & + (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, p+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & -1/2 (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & + (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & + (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, p+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & + (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & +1/2 (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, p+k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & - (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, p+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & - (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & +1/2 (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, p+k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & - (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, p+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & - (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \end{aligned}$$

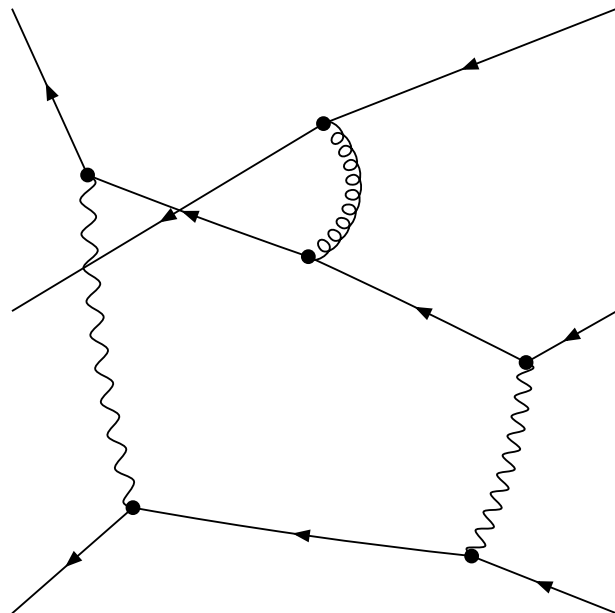


-3+10-13



-3+8-15

**final**



-1+8-13

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

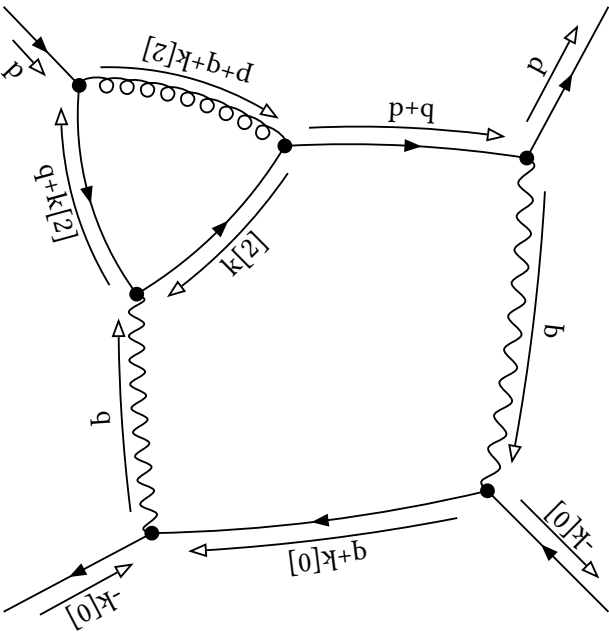
initial

Denominator:

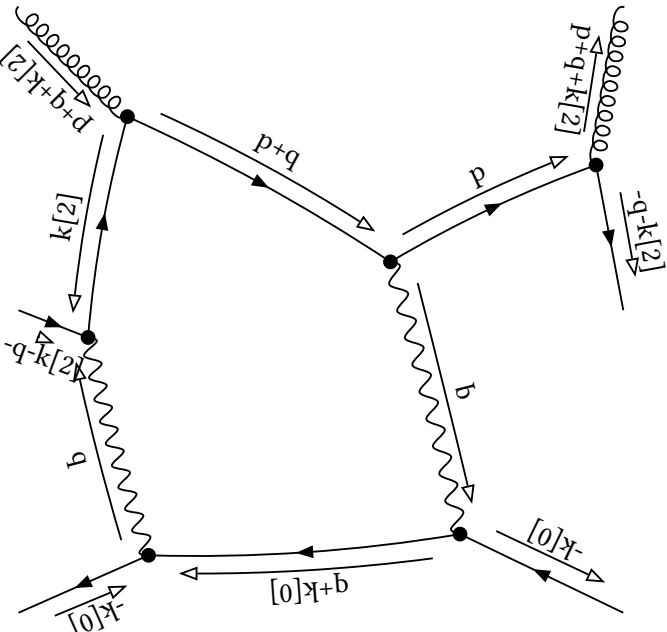
$\text{prop}[0,p]^{-1} \text{prop}[0,k[2]]^{-1} \text{prop}[0,p+q]^{-1} \text{prop}[0,q+k[2]]^{-1} \text{prop}[0,p+q+k[2]]^{-1}$

Partial Fractioned Denominator:

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

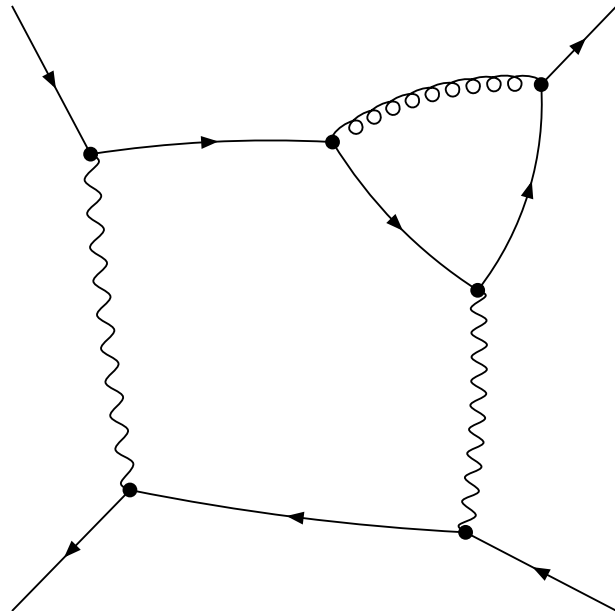


-3+13

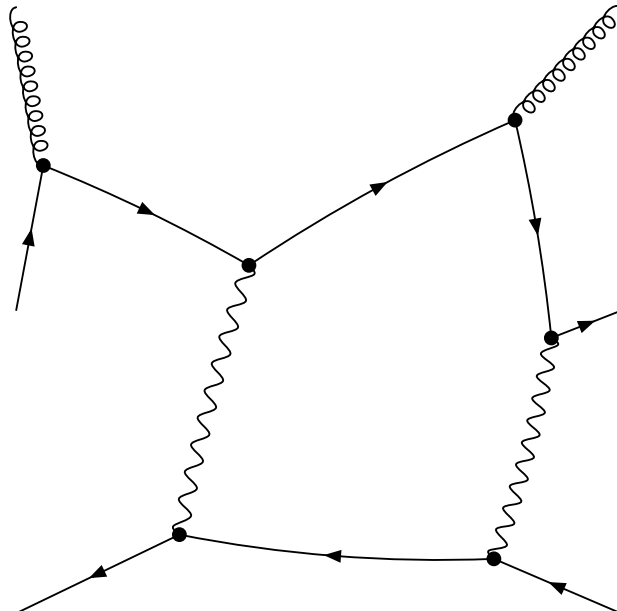


-3-8+16

**final**



-1+15



-1-10+16

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

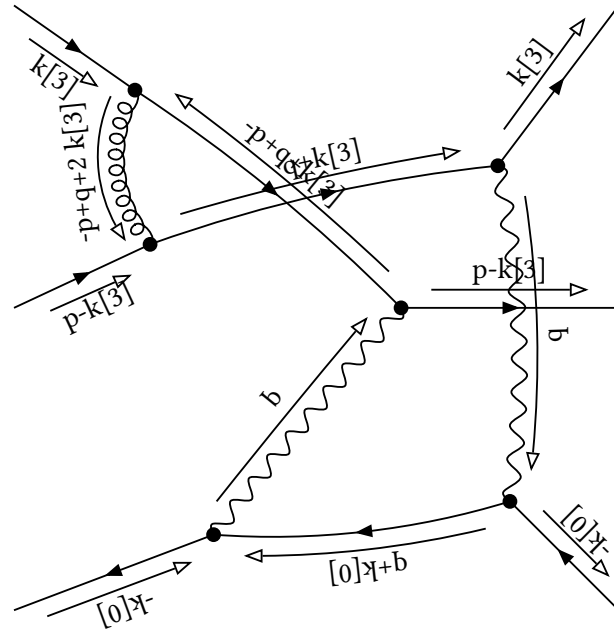
### initial

Denominator:

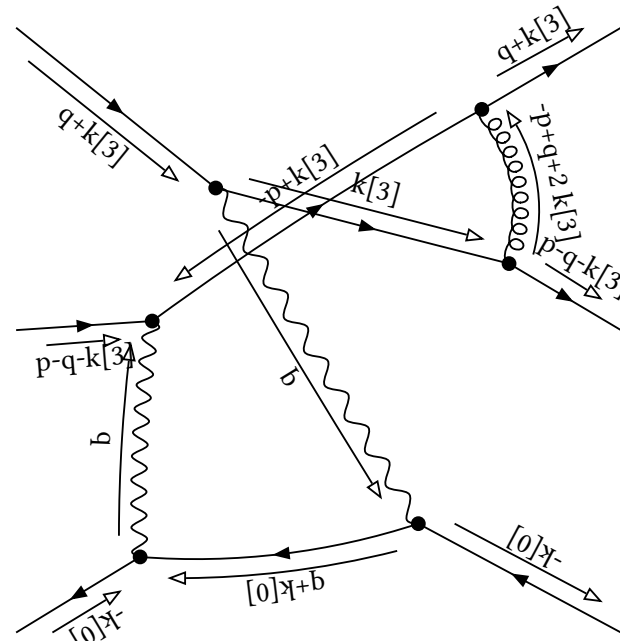
$$\text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+q+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1}$$

Partial Fractioned Denominator:

$$\begin{aligned} & -1/2 (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & + (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & + (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & -1/2 (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+q+k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & + (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+q+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & + (-\text{dot}[p, p] - 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+q+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & +1/2 (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+q+k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & - (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & +1/2 (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+q+k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & - (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & - (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+q+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \\ & - (-\text{dot}[p, p] + 2 \text{dot}[p, q] - \text{dot}[q, q])^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+q+k[3]]^{-1} \text{prop}[0, -p+q+2 k[3]]^{-1} \text{dot}[p, q]^{-1} \end{aligned}$$

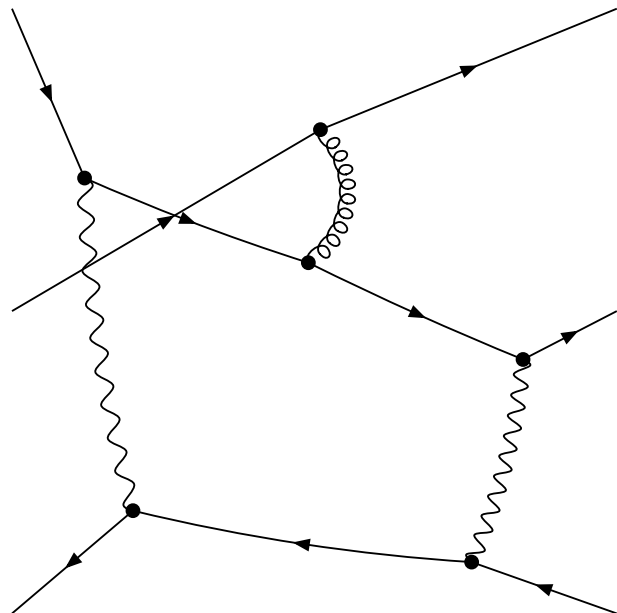


-3-10+13



-3-8+15

**final**



-1-10+15



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

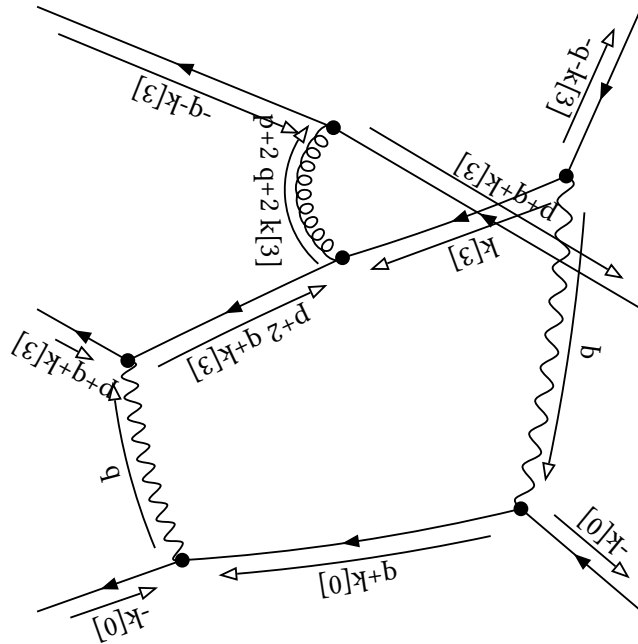
### initial

Denominator:

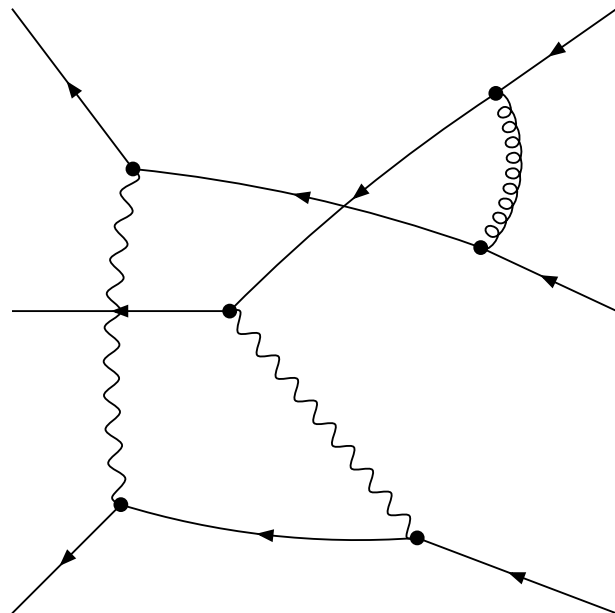
$$\text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+2 \ q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1}$$

Partial Fractioned Denominator:

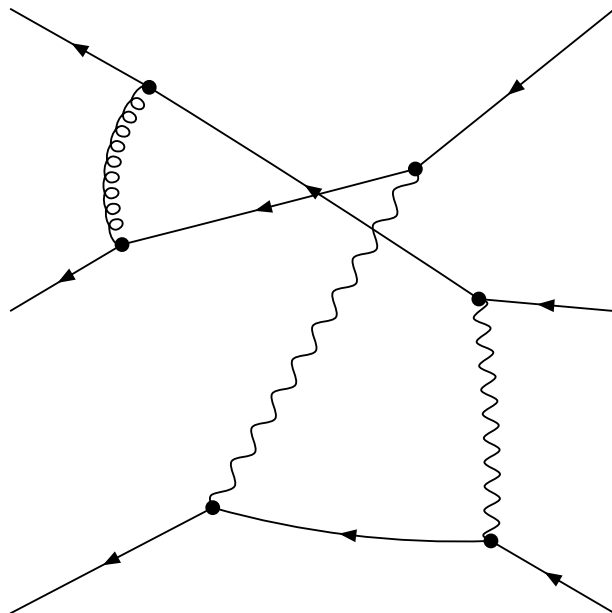
$$\begin{aligned} & (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+2 \ q+k[3]]^{-1} \\ & -2 (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1} \\ & + (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+2 \ q+k[3]]^{-1} \\ & -2 (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1} \\ & -2 (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+2 \ q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1} \\ & -2 (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+2 \ q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1} \\ & + (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & -2 (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & -2 (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & + (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+2 \ q+k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & -2 (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, p+2 \ q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & -2 (-2 \text{dot}[p, q] - 2 \text{dot}[q, q])^{-1} \text{prop}[0, p+q+k[3]]^{-1} \text{prop}[0, p+2 \ q+k[3]]^{-1} \text{prop}[0, p+2 \ q+2 \ k[3]]^{-1} \text{dot}[p, p]^{-1} \end{aligned}$$



**final**



-1+10-13



-1+8-15

embedding 10 [1, 1, 0, 1]

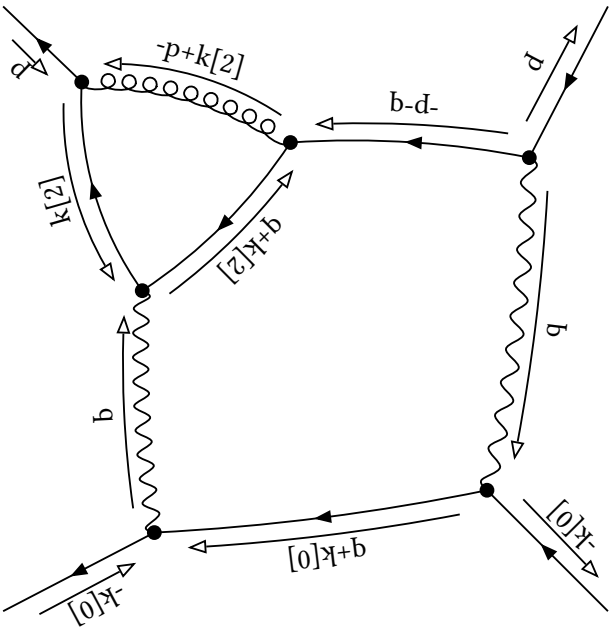
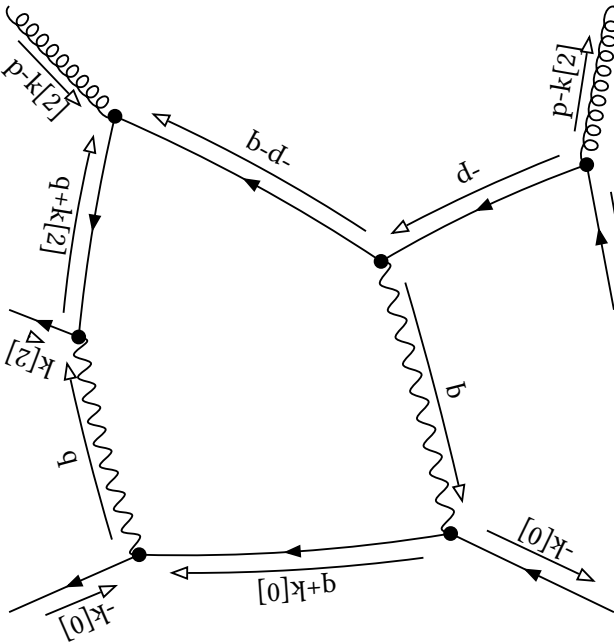
initial

Denominator:

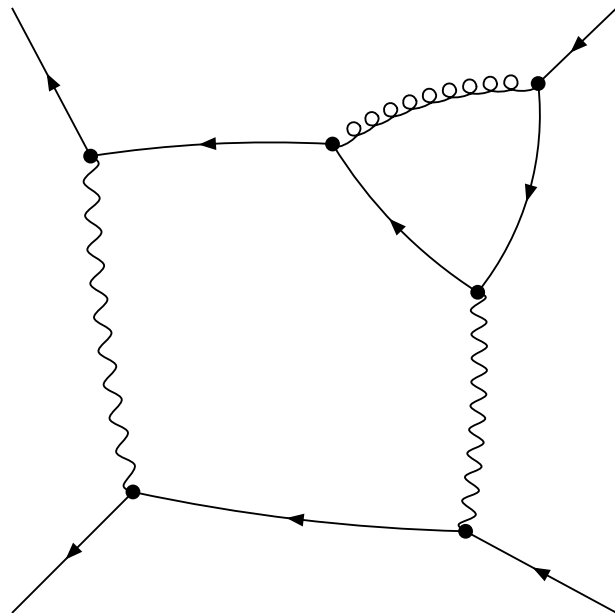
$\text{prop}[0,k[2]]^{-1} \text{prop}[0,-p]^{-1} \text{prop}[0,q+k[2]]^{-1} \text{prop}[0,-p+k[2]]^{-1} \text{prop}[0,-p-q]^{-1}$

Partial Fractioned Denominator:

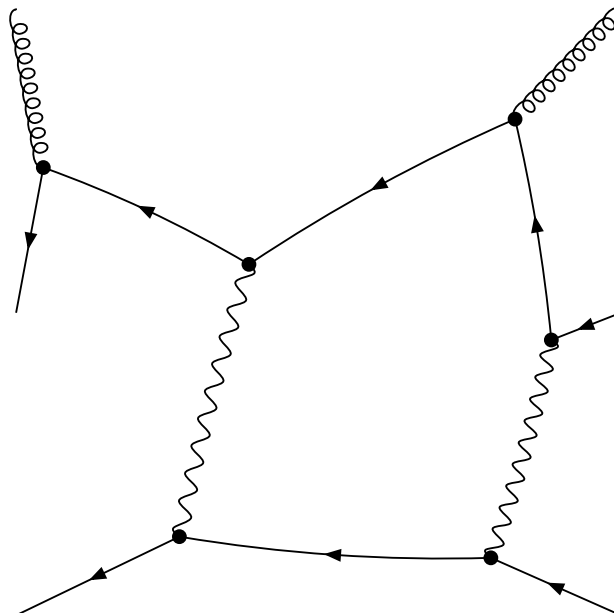
$(\text{dot}[p,p]+2 \text{dot}[p,q]+\text{dot}[q,q])^{-1} \text{prop}[0,k[2]]^{-1} \text{prop}[0,q+k[2]]^{-1} \text{prop}[0,-p+k[2]]^{-1} \text{dot}[p,p]^{-1}$



**final**



-1-13



-1+8-16

## embedding 11 [1, 1, 1, -1]

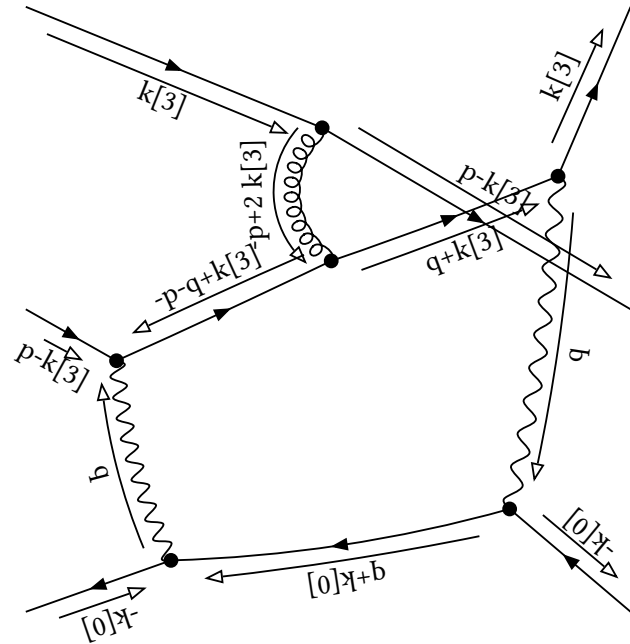
### initial

Denominator:

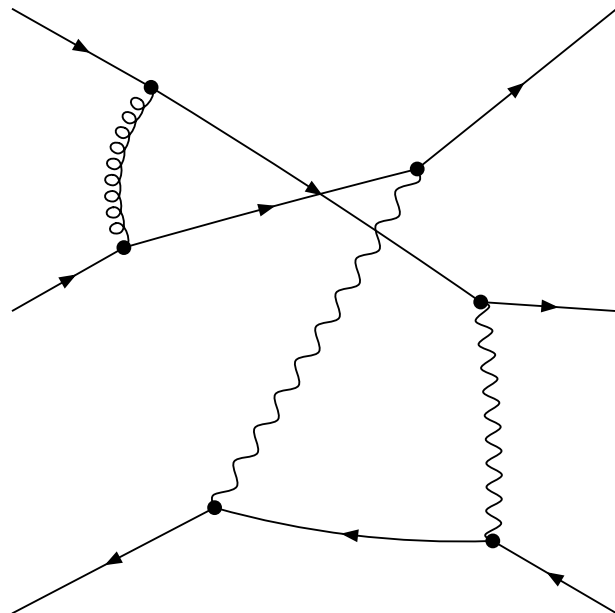
$$\text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \text{prop}[0, -p-q+k[3]]^{-1}$$

Partial Fractioned Denominator:

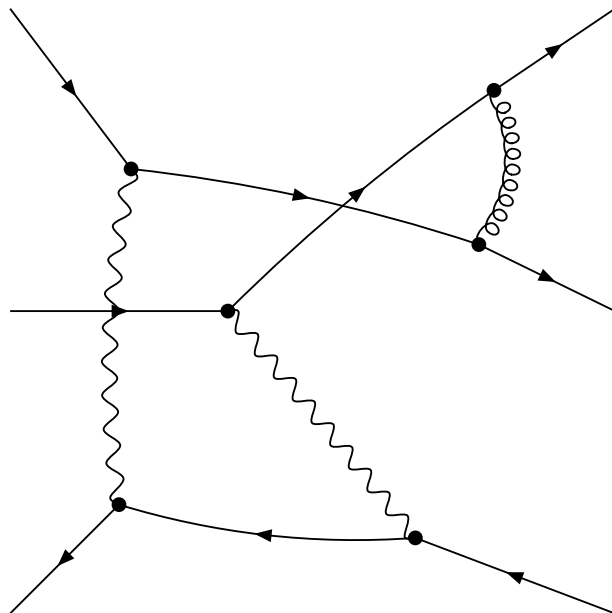
$$\begin{aligned} & 2 (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \\ & - (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p-q+k[3]]^{-1} \\ & + 2 (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \text{prop}[0, -p-q+k[3]]^{-1} \\ & + 2 (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \\ & - (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p-q+k[3]]^{-1} \\ & + 2 (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} (-\text{dot}[p, p] - 4 \text{dot}[p, q] - 4 \text{dot}[q, q])^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \text{prop}[0, -p-q+k[3]]^{-1} \\ & - (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & + 2 (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & - (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p-q+k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & + 2 (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} \text{prop}[0, k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \text{prop}[0, -p-q+k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & + 2 (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \text{dot}[p, p]^{-1} \\ & + 2 (2 \text{dot}[p, q] + 2 \text{dot}[q, q])^{-1} \text{prop}[0, -p+k[3]]^{-1} \text{prop}[0, -p+2 k[3]]^{-1} \text{prop}[0, -p-q+k[3]]^{-1} \text{dot}[p, p]^{-1} \end{aligned}$$



**final**



-1-10+13



-1-8+15

embedding 12 [1, 1, 1, 0]

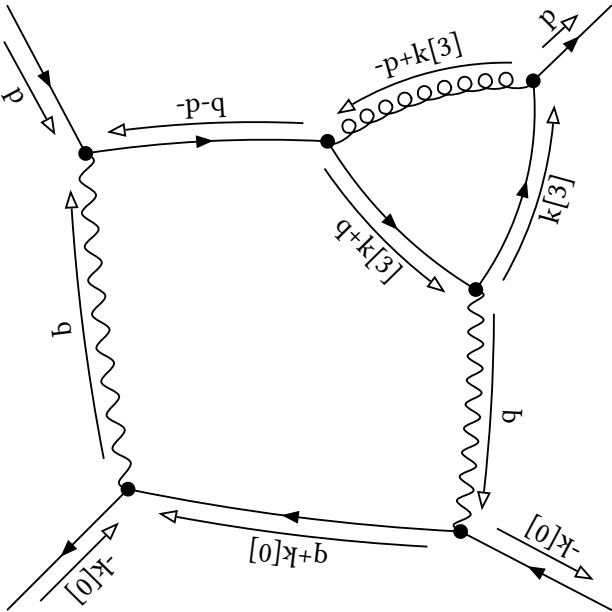
initial

Denominator:

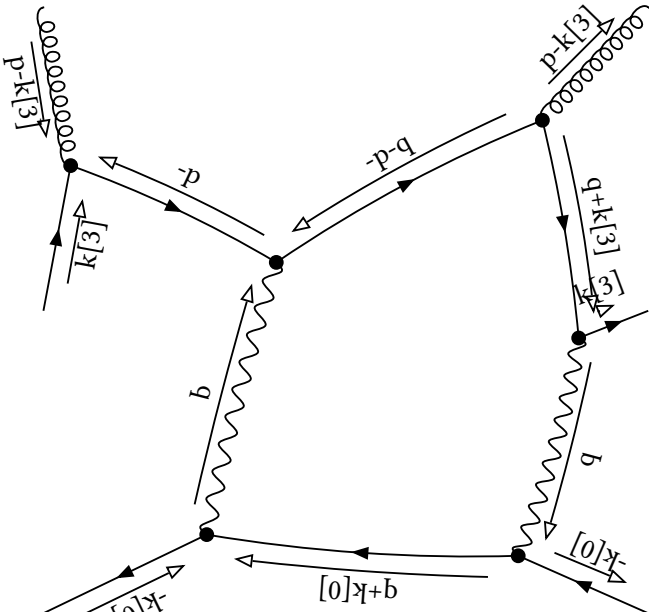
$\text{prop}[0,k[3]]^{-1} \text{prop}[0,-p]^{-1} \text{prop}[0,q+k[3]]^{-1} \text{prop}[0,-p+k[3]]^{-1} \text{prop}[0,-p-q]^{-1}$

Partial Fractioned Denominator:

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

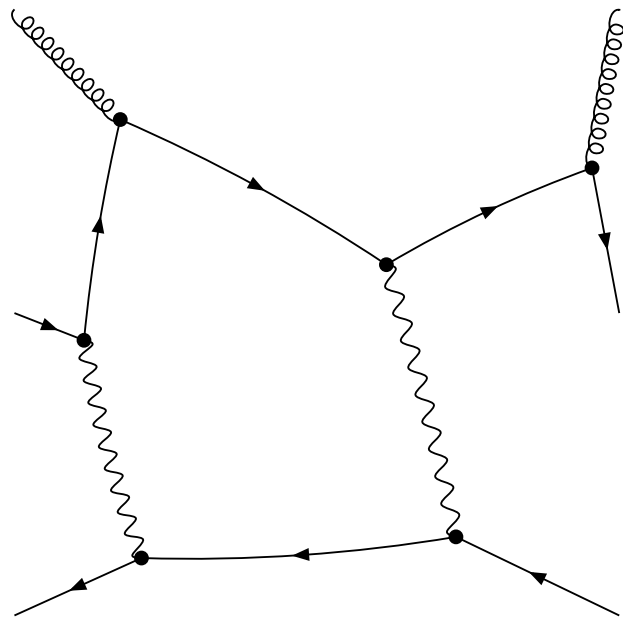


-3-8

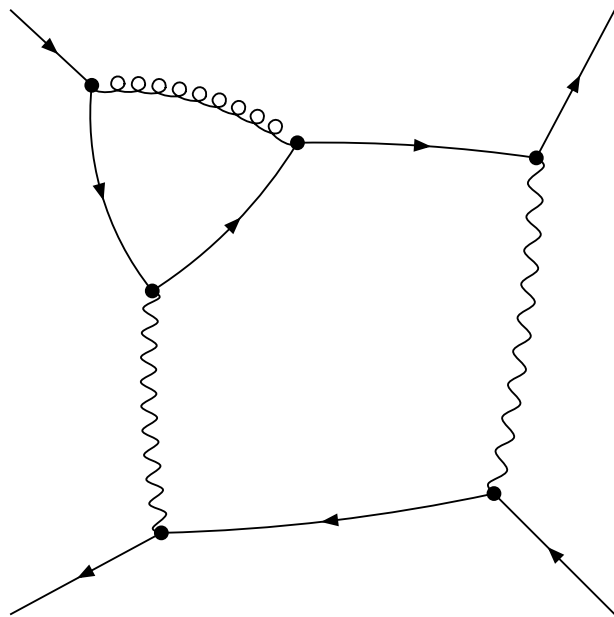


-3+13-16

**final**



-1+15-16



-1-10



## embedding 13 [1, 1, 1, 1]

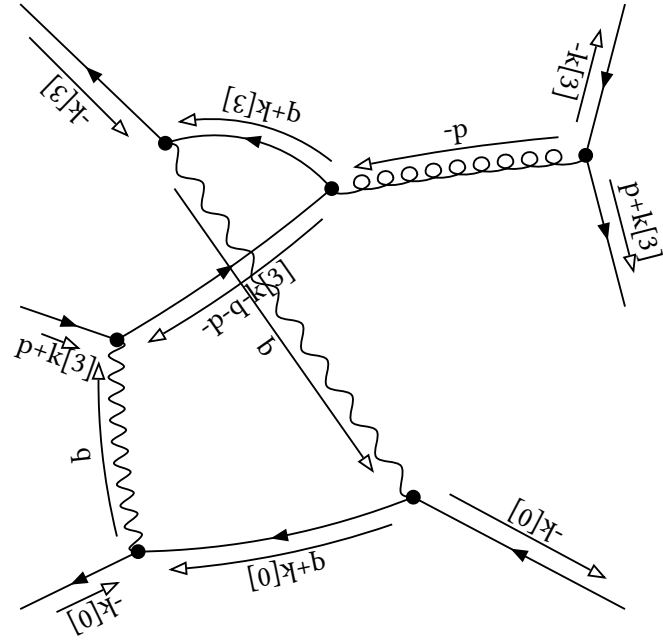
### initial

Denominator:

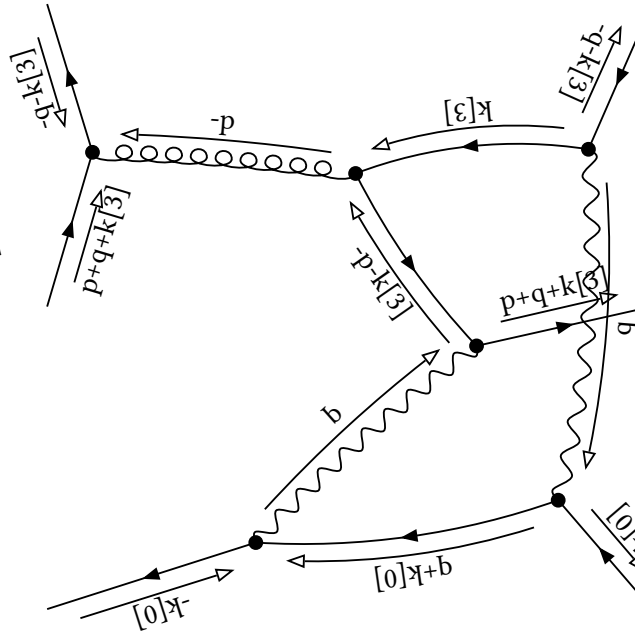
$$\text{prop}[0, k[3]]^{-1} \text{prop}[0, -p]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p-k[3]]^{-1} \text{prop}[0, -p-q-k[3]]^{-1}$$

Partial Fractioned Denominator:

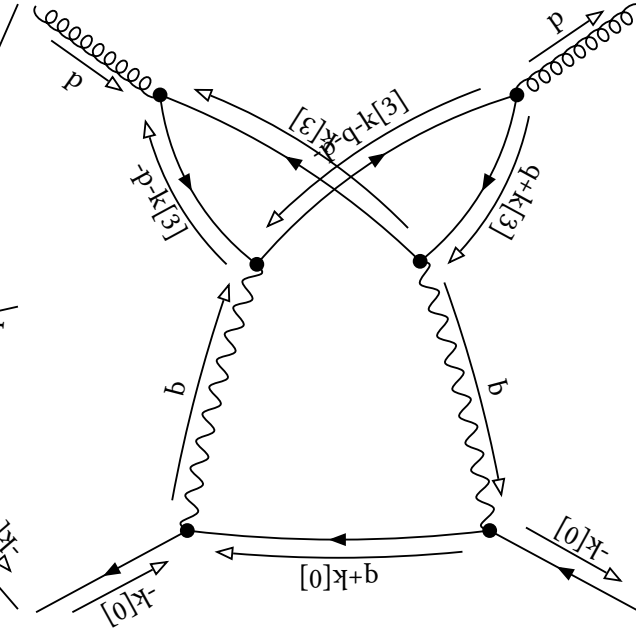
$$\begin{aligned} & 1/2 \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p-k[3]]^{-1} \text{dot}[p, p]^{-1} \text{dot}[p, q]^{-1} \\ & -1/2 \text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p-q-k[3]]^{-1} \text{dot}[p, p]^{-1} \text{dot}[p, q]^{-1} \\ & -1/2 \text{prop}[0, k[3]]^{-1} \text{prop}[0, -p-k[3]]^{-1} \text{prop}[0, -p-q-k[3]]^{-1} \text{dot}[p, p]^{-1} \text{dot}[p, q]^{-1} \\ & +1/2 \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -p-k[3]]^{-1} \text{prop}[0, -p-q-k[3]]^{-1} \text{dot}[p, p]^{-1} \text{dot}[p, q]^{-1} \end{aligned}$$



-3-8-13

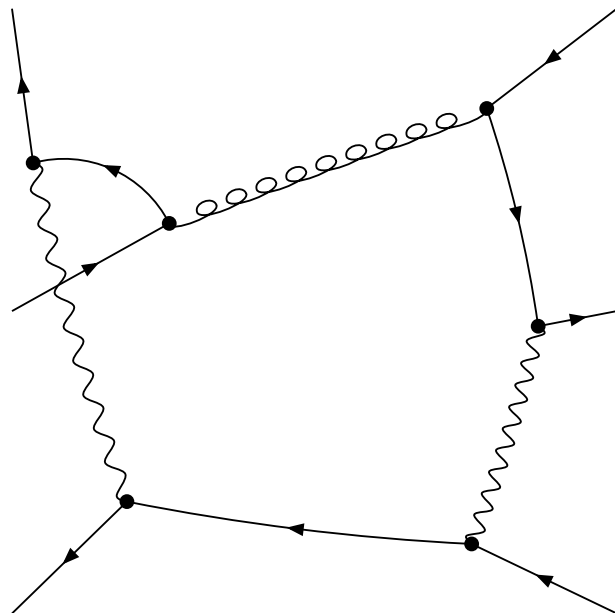


-3-10-15



-3-16

**final**



-1-10-13

## embedding 14 [1, 2, 1, 1]

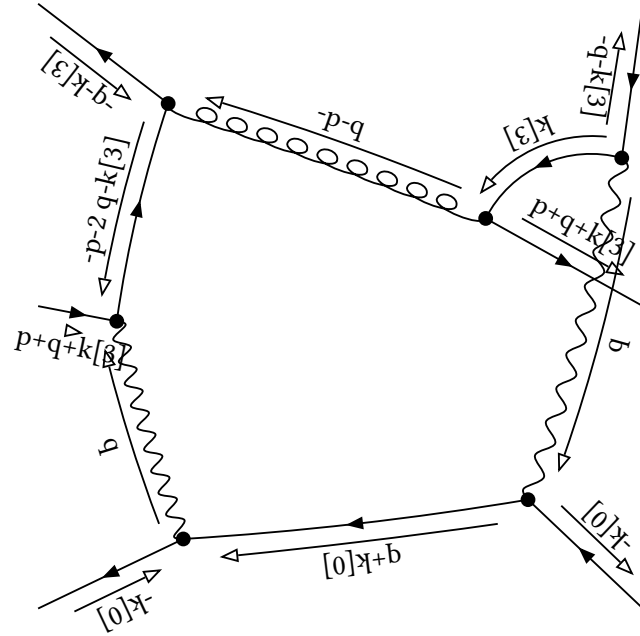
### initial

Denominator:

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

Partial Fractioned Denominator:

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

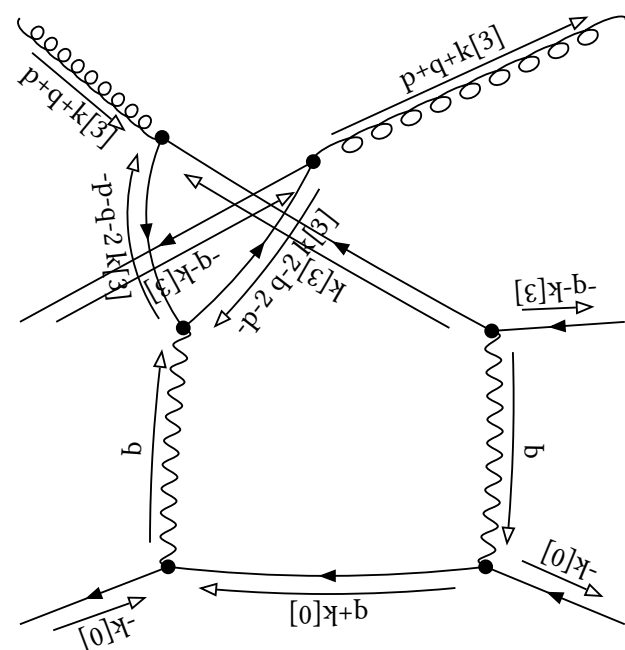


A Feynman diagram illustrating a process involving a fermion loop. The diagram consists of several external lines and internal propagators. On the left, two fermion lines (solid lines with arrows) enter and exit a vertex. A scalar particle (dashed line) is exchanged between this vertex and another vertex on the right. This second vertex is part of a fermion loop, represented by a solid line with an arrow. A gluon (wavy line) is exchanged between this loop and a third vertex on the right. Finally, a fermion line enters and exits this third vertex. The diagram is drawn with black lines and arrows on a white background.

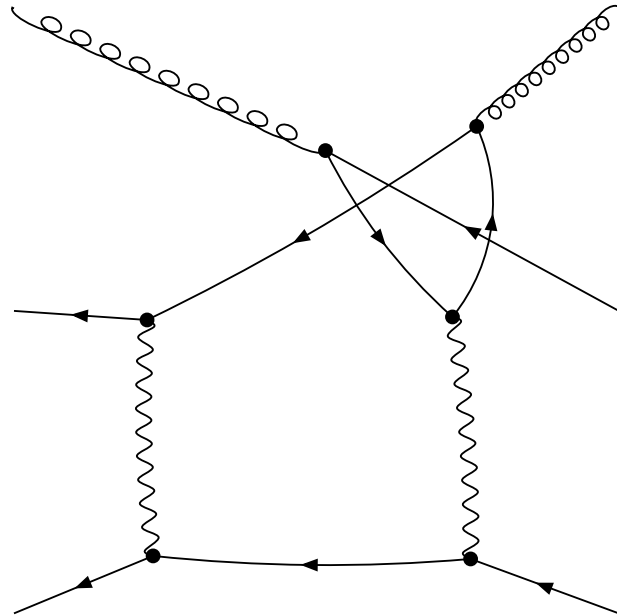
A Feynman diagram illustrating the process  $e^+e^- \rightarrow e^+e^- + 2\gamma$ . The diagram shows an incoming electron (solid line with arrow) and an incoming positron (solid line with arrow pointing left). They interact via a series of vertices (black dots) connected by internal lines. The final state consists of an outgoing electron, an outgoing positron, and two outgoing photons (wavy lines). The diagram is a tree-level diagram, showing the exchange of a photon between the electron and positron lines, followed by the emission of two more photons.

-1-8-13

**initial**

$$\text{prop}[0,k[3]]^{-1} \text{prop}[0,q+k[3]]^{-1} \text{prop}[0,-p-q-k[3]]^{-1} \text{prop}[0,-p-q-2 \ k[3]]^{-1} \text{prop}[0,-p-2 \ q-2 \ k[3]]^{-1}$$
$$\begin{aligned} & 1/4 \, (-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, (1/2 \, \text{dot}[p,p]+\text{dot}[p,q]+1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,k[3]]^{-1} \, \text{prop}[0,q+k[3]]^{-1} \, \text{prop}[0,-p-q-k[3]]^{-1} \\ & \quad -1/2 \, (-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, (1/2 \, \text{dot}[p,p]+\text{dot}[p,q]+1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,k[3]]^{-1} \, \text{prop}[0,q+k[3]]^{-1} \, \text{prop}[0,-p-q-2 \, k[3]]^{-1} \\ & \quad -1/2 \, (-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, (1/2 \, \text{dot}[p,p]+\text{dot}[p,q]+1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,k[3]]^{-1} \, \text{prop}[0,-p-q-k[3]]^{-1} \, \text{prop}[0,-p-2 \, q-2 \, k[3]]^{-1} \\ & \quad +(-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, (1/2 \, \text{dot}[p,p]+\text{dot}[p,q]+1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,k[3]]^{-1} \, \text{prop}[0,-p-q-2 \, k[3]]^{-1} \, \text{prop}[0,-p-2 \, q-2 \, k[3]]^{-1} \\ & \quad -1/2 \, (-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, (1/2 \, \text{dot}[p,p]+\text{dot}[p,q]+1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,q+k[3]]^{-1} \, \text{prop}[0,-p-q-k[3]]^{-1} \, \text{prop}[0,-p-q-2 \, k[3]]^{-1} \\ & \quad +(-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, (1/2 \, \text{dot}[p,p]+\text{dot}[p,q]+1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,-p-q-k[3]]^{-1} \, \text{prop}[0,-p-q-2 \, k[3]]^{-1} \, \text{prop}[0,-p-2 \, q-2 \, k[3]]^{-1} \\ & \quad -1/2 \, (-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,k[3]]^{-1} \, \text{prop}[0,q+k[3]]^{-1} \, \text{prop}[0,-p-q-k[3]]^{-1} \, \text{dot}[p,p]^{-1} \\ & \quad +(-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,k[3]]^{-1} \, \text{prop}[0,q+k[3]]^{-1} \, \text{prop}[0,-p-2 \, q-2 \, k[3]]^{-1} \, \text{dot}[p,p]^{-1} \\ & \quad +(-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,k[3]]^{-1} \, \text{prop}[0,-p-q-k[3]]^{-1} \, \text{prop}[0,-p-2 \, q-2 \, k[3]]^{-1} \, \text{dot}[p,p]^{-1} \\ & \quad +(-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,q+k[3]]^{-1} \, \text{prop}[0,-p-q-k[3]]^{-1} \, \text{prop}[0,-p-q-2 \, k[3]]^{-1} \, \text{dot}[p,p]^{-1} \\ & \quad -2 \, (-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,q+k[3]]^{-1} \, \text{prop}[0,-p-q-2 \, k[3]]^{-1} \, \text{prop}[0,-p-2 \, q-2 \, k[3]]^{-1} \, \text{dot}[p,p]^{-1} \\ & \quad -2 \, (-\text{dot}[p,q]-1/2 \, \text{dot}[q,q])^{-1} \, \text{prop}[0,-p-q-k[3]]^{-1} \, \text{prop}[0,-p-q-2 \, k[3]]^{-1} \, \text{prop}[0,-p-2 \, q-2 \, k[3]]^{-1} \, \text{dot}[p,p]^{-1} \end{aligned}$$


**final**



-1-13-16

## embedding 16 [1, 2, 2, 1]

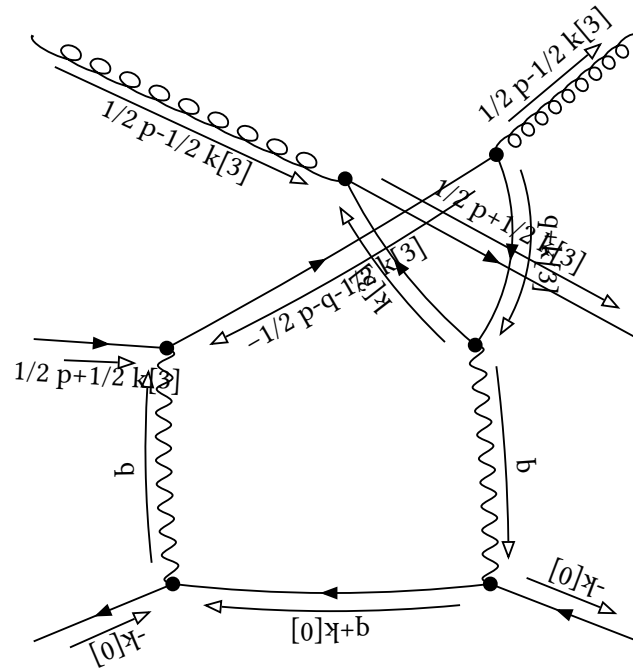
### initial

Denominator:

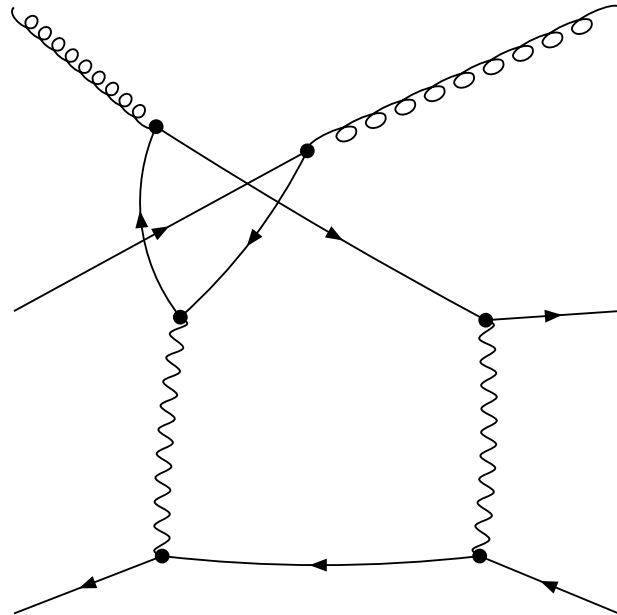
$$\text{prop}[0, k[3]]^{-1} \text{prop}[0, q+k[3]]^{-1} \text{prop}[0, -1/2 p+1/2 k[3]]^{-1} \text{prop}[0, -1/2 p-1/2 k[3]]^{-1} \text{prop}[0, -1/2 p-q-1/2 k[3]]^{-1}$$

Partial Fractioned Denominator:

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



**final**



-1-10-16



