

FORM by J.Vermaseren, version 3.3(Jun 10 2009) Run at: Wed Apr 17 12:55:40
2013

```
Symbols gur,gus,gvr,gvs,Sur,Sus,Svr,Svs,i;
Functions gu,gv,gr,gs,suv,srs,sur,sus,svr,svs;
Off stat;
Global Z=suv*srs-srs*suv;
id suv=i*(gu*gv-gv*gu)/4;
id srs=i*(gr*gs-gs*gr)/4;
id i*i=-1;
Print;
.sort
```

```
Z =
- 1/16*gu*gv*gr*gs + 1/16*gu*gv*gs*gr + 1/16*gv*gu*gr*gs -
1/16*gv*gu*
gs*gr + 1/16*gr*gs*gu*gv - 1/16*gr*gs*gv*gu - 1/16*gs*gr*gu*gv +
1/16*gs
*gr*gv*gu;
```

```
id gv*gr=2*gvr-gr*gv;
id gv*gs=2*gvs-gs*gv;
id gu*gr=2*gur-gr*gu;
id gu*gs=2*gus-gs*gu;
Bracket gur,gus,gvr,gvs,i;
Print;
.sort
```

```
Z =
+ gvs * ( - 1/4*gr*gu )
+ gvr * ( 1/8*gs*gu )
+ gus * ( - 3/8*gv*gr + 1/8*gr*gv )
+ gus*gvr * ( - 1/4 )
+ gur * ( 1/8*gv*gs - 1/8*gs*gv )
+ gur*gvs * ( 1/2 )
+ 1/16*gv*gr*gs*gu + 1/16*gv*gs*gu*gr - 1/16*gr*gs*gv*gu +
1/16*gs*gu*
gv*gr - 1/16*gs*gr*gu*gv + 1/16*gs*gr*gv*gu;
```

```
id gv*gr=2*gvr-gr*gv;
id gv*gs=2*gvs-gs*gv;
```

```

id gu*gr=2*gur-gr*gu;
id gu*gs=2*gus-gs*gu;
Bracket gur,gus,gvr,gvs,i;
Print;
.sort

```

$$\begin{aligned}
Z = & \\
& + gvs * (- 1/2*gr*gu) \\
& + gvr * (3/8*gs*gu) \\
& + gus * (1/2*gr*gv) \\
& + gus*gvr * (- 1) \\
& + gur * (- 1/2*gs*gv) \\
& + gur*gvs * (1) \\
& + 1/16*gs*gv*gr*gu + 1/16*gs*gr*gv*gu;
\end{aligned}$$

```

id gv*gr=2*gvr-gr*gv;
Bracket gur,gus,gvr,gvs,i;
Print;
.sort

```

$$\begin{aligned}
Z = & \\
& + gvs * (- 1/2*gr*gu) \\
& + gvr * (1/2*gs*gu) \\
& + gus * (1/2*gr*gv) \\
& + gus*gvr * (- 1) \\
& + gur * (- 1/2*gs*gv) \\
& + gur*gvs * (1);
\end{aligned}$$

```

id gr*gu=gr*gu/2+gur+gu*gr/2;
id gs*gu=gs*gu/2+gus+gu*gs/2;
id gr*gv=gr*gv/2+gvr+gv*gr/2;
id gs*gv=gs*gv/2+gvs+gv*gs/2;
Bracket gur,gus,gvr,gvs,i;
Print;
.sort

```

```

Z =
+ gvs * ( - 1/4*gu*gr - 1/4*gr*gu )
+ gvr * ( 1/4*gu*gs + 1/4*gs*gu )
+ gus * ( 1/4*gv*gr + 1/4*gr*gv )
+ gur * ( - 1/4*gv*gs - 1/4*gs*gv );

```

```

id gu*gr=-4*i*Sur-gr*gu;
id gu*gs=-4*i*Sus-gs*gu;
id gv*gr=-4*i*Svr-gr*gv;
id gv*gs=-4*i*Svs-gs*gv;
Bracket i;
Print;
.end

```

```

Z =
+ i * ( gvs*Sur - gvr*Sus - gus*Svr + gur*Svs );

```

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