```
> for m from 1 to ordre do
  FF||m :=
  mtaylor(expand(expand(FF)), [z,s,zb,sb,v], m+1, [1,1,1,1,2])
  -
  mtaylor(expand(expand(FF)), [z,s,zb,sb,v], m, [1,1,1,1,2]);
  od;
```

$$FF1 := 0$$

$$FF2 := z\,zb$$

$$FF3 := \frac{1}{2}\,z^2\,sb + \frac{1}{2}\,zb^2\,s$$

$$FF4 := z\,zb\,s\,sb$$

$$FF5 := z^3\,sb^2 + s^2\,zb^3 + \frac{1}{2}\,s\,sb^2\,z^2 + \frac{1}{2}\,zb^2\,s^2\,sb$$

$$FF6 := -2\,z\,s^2\,zb^3 - 2\,z^2\,s\,zb^3 + 3\,z^2\,s\,zb\,sb^2 + \frac{1}{3}\,s^3\,zb^3 + z\,zb\,s^2\,sb^2 - 2\,z^3\,zb^2\,sb + 3\,z\,s^2\,zb^2\,sb + \frac{1}{3}\,z^3\,sb^3 - 2\,z^3\,zb\,sb^2$$

$$FF7 := \frac{8}{3}\,s^3\,zb^4 - 6\,z^2\,s^2\,zb^2\,sb + z\,s^3\,zb^2\,sb + 4\,z^3\,s\,zb^3 + \frac{8}{3}\,z^4\,sb^3 + z^4\,zb^3 + z^3\,zb^4 + 3\,s^3\,zb^3\,sb - \frac{4}{3}\,z^3\,zb\,sb^3 - 2\,z^4\,zb\,sb^2 + z^2\,s\,zb\,sb^3 - \frac{4}{3}\,z\,s^3\,zb^3 + 2\,z^3\,zb^2\,sb^2 + \frac{1}{2}\,zb^2\,s^3\,sb^2 + 3\,z^3\,s\,sb^3 - 6\,z^2\,s\,zb^3\,sb + \frac{1}{2}\,sb^3\,s^2\,z^2 - 6\,z^3\,s\,zb^2\,sb - 6\,z^2\,s\,zb^2\,sb^2 + 3\,z^2\,s^2\,zb\,sb^2 + 2\,z^2\,s^2\,zb^3 + 3\,z\,s^2\,zb^2\,sb^2 + 4\,z^3\,zb^3\,sb - 2\,z\,s^2\,zb^4$$

$$FF8 := z\,zb\,s^3\,sb^3 + z\,s^2\,zb^2\,sb^3 + z^2\,s^3\,zb\,sb^2 + 9\,z^2\,s^2\,zb\,sb^3 + 9\,z\,s^3\,zb^2\,sb^2 + \frac{14}{3}\,z\,s^3\,zb^3\,sb + 12\,z^2\,s\,zb^4\,sb - 6\,z\,s^2\,zb^4\,sb - 6\,z^4\,s\,zb\,sb^2 + 9\,z^2\,s^2\,zb^2\,sb^2 + 6\,z^2\,s\,zb^3\,sb^2 + 12\,z^4\,s\,zb^2\,sb + 6\,z^3\,s^2\,zb^2\,sb + \frac{14}{3}\,z^3\,s\,zb\,sb^3 - 14\,z^3\,s\,zb^2\,sb^2 - 14\,z^2\,s^2\,zb^3\,sb - 4\,z^2\,s\,zb^2\,sb^3 - 4\,z^2\,s^3\,zb^2\,sb - 6\,z^3\,s^2\,zb\,sb^2 - 6\,z\,s^2\,zb^3\,sb^2 + s^3\,zb^3\,sb^2 + 4\,z^3\,s\,zb^4 - 12\,z^4\,zb\,sb^3 + 4\,z^4\,zb^3\,sb + \frac{10}{3}\,z^3\,zb^2\,sb^3 + 3\,z^5\,zb^2\,sb + z^3\,s\,sb^4 + s^4\,zb^3\,sb - 5\,z^4\,s\,zb^3 + \frac{10}{3}\,z^2\,s^3\,zb^3 - 4\,z^4\,zb^2\,sb^2 - 5\,z^3\,zb^4\,sb - 12\,z\,s^3\,zb^4 - 4\,z^2\,s^2\,zb^4 + 3\,z^2\,s\,zb^5 - \frac{2}{3}\,z^5\,sb^3 + \frac{13}{6}\,z^4\,sb^4 - 2\,z^5\,zb^3 + \frac{13}{6}\,s^4\,zb^4 - 2\,z^3\,zb^5 - \frac{2}{3}\,s^3\,zb^5 + z^3\,s^2\,sb^3 \tag{1}$$

```
> for m from 0 to ordre-2 do
  AA||m :=
  mtaylor(expand(expand(AA)), [z,s,w], m+1, [1,1,2])
  -
  mtaylor(expand(expand(AA)), [z,s,w], m, [1,1,2]);
  od;
```

$$AA0 := a + \mathrm{I}\,b$$
$$AA1 := (-a + \mathrm{I}\,b)\,s + (2\,a - 3\,c + 2\,\mathrm{I}\,b + \mathrm{I}\,d)\,z$$
$$AA2 := (-2\,a + 2\,c)\,w + (2\,a - 4\,c + 2\,\mathrm{I}\,d)\,z^2 + (-c + \mathrm{I}\,d)\,z\,s$$
$$AA3 := (-2\,a + 2\,c)\,s\,w + (-4\,a + 4\,c)\,z\,w$$
$$AA4 := 0$$
$$AA5 := 0$$
$$AA6 := 0 \qquad \textbf{(2)}$$

```
> for m from 0 to ordre-3 do
  BB||m :=
  mtaylor(expand(expand(BB)), [z,s,w], m+1, [1,1,2])
  -
  mtaylor(expand(expand(BB)), [z,s,w], m, [1,1,2]);
  od;
```

$$BB0 := c + \mathrm{I}\,d$$
$$BB1 := (2\,\mathrm{I}\,d + 4\,\mathrm{I}\,b)\,s + (4\,a + 4\,\mathrm{I}\,d)\,z$$
$$BB2 := (8\,a - 8\,c + 4\,\mathrm{I}\,d - 4\,\mathrm{I}\,b)\,z^2 + (-6\,a + 6\,\mathrm{I}\,b - c + \mathrm{I}\,d)\,s^2 + (4\,a - 12\,c + 8\,\mathrm{I}\,d)\,z\,s$$
$$BB3 := (4\,c - 4\,\mathrm{I}\,d)\,z^3 + (2\,\mathrm{I}\,b - 2\,a)\,s^3 + (-12\,\mathrm{I}\,b + 12\,a)\,z^2\,s + (-8\,a + 8\,c)\,s\,w + (-12\,\mathrm{I}\,b + 12\,a + 6\,\mathrm{I}\,d - 6\,c)\,z\,s^2$$
$$BB4 := (8\,a - 8\,c)\,z^2\,w + (-6\,a + 6\,\mathrm{I}\,b)\,z^4 + (-12\,\mathrm{I}\,d + 24\,\mathrm{I}\,b - 24\,a + 12\,c)\,z^3\,s + (8\,a - 2\,c + 2\,\mathrm{I}\,d - 8\,\mathrm{I}\,b)\,z\,s^3 + (-12\,a + 12\,\mathrm{I}\,b + 12\,c - 12\,\mathrm{I}\,d)\,z^2\,s^2 + (-12\,a + 12\,c)\,s^2\,w$$
$$BB5 := (-12\,\mathrm{I}\,b + 12\,a + 6\,\mathrm{I}\,d - 6\,c)\,z^5 + (-24\,c - 30\,\mathrm{I}\,b + 30\,a + 24\,\mathrm{I}\,d)\,z^4\,s + (-20\,a + 20\,\mathrm{I}\,b + 8\,c - 8\,\mathrm{I}\,d)\,z^2\,s^3 + (-12\,c + 12\,\mathrm{I}\,d)\,z^3\,s^2 + (-4\,a + 4\,c)\,s^3\,w + (-24\,c + 24\,a)\,z\,s^2\,w + (-24\,c + 24\,a)\,z^2\,s\,w \qquad \textbf{(3)}$$

```
> for m from 0 to ordre-1 do
  CC||m :=
```

```
mtaylor(expand(expand(CC)), [z,s,w], m+1, [1,1,2])
-
mtaylor(expand(expand(CC)), [z,s,w], m, [1,1,2]);

od;
```

$$CC0 := \mathrm{I}\, e$$
$$CC1 := (2\, a - 2\, \mathrm{I}\, b)\, z$$
$$CC2 := (4\, a - 6\, c)\, w + (c - \mathrm{I}\, d)\, z^2$$
$$CC3 := (4\, a - 4\, c)\, z\, w$$
$$CC4 := 0$$
$$CC5 := 0$$
$$CC6 := 0$$
$$CC7 := 0 \qquad \textbf{(4)}$$