

1 素遺撮亥絮潟 吾守 宴若 taji_alc

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1.0
2007 認 11

1 1 素遣撮亥絮渦 吾守

1.1 1 素遣撮亥絮渦 吾守 宴若 taji_alc や

吾 1 素遣撮亥絮渦 吾守 宴若 taji_alc や . 医 茹 h や , 茹 h 荐篋 “1 素遣撮亥絮渦 吾守 Risa/Asir 宴若 taji_alc” (Risa/Asir Journal (2007)) 渦 .

1.2 1 素遣撮亥絮渦 吾守

```
社 激 渦 違若喝訝 ,
import("taji_alc.rr")$
紘茵 違 若.
```

1.2.1 taji_alc.cpfid

```
taji_alc.cpfid(num,den)
:: num/den 医茹 c 罷.
return switch01 , [[[紘,[罰 紘,茲綺]],...],...] 鴻.
switch1011 , [[[紘,[罰 紘,茲綺]],...],...] 鴻.
num ( 違 紘) 素縊
den ( 違 罰) 素縊
障 ( 違 罰 Q 箏 茹 c ) [[[紘,茲綺]],...] 鴻
switch 激 恰紘
case 0 : complete 医茹 c 菴. (紘 遣医縊)
case 1 : complete 医茹 c 菴. (紘 贗遣医 鴻)
case 10 : 罰 医茹 c 菴. (紘 遣医縊)
case 11 : 罰 医茹 c 菴. (紘 贗遣医 鴻)
default : case 0
```

- taji_alc.cpfid(), proper 違絲乘院 . ヌ ya proper 翫 罩 e 幻 箵, 素縊 訝 ; 腓訝 .
- 医茹 c , complete 帥 ya , 帥 ya 2 ya 帥 ya . taji_alc.cpfid() 眼 訝 , 障. 緇, 若帥若惹 恭箏 .
- den, 鴻 ヌ障. (素縊 ヌ, 臂 .) 翫 , , 縊 , 贗遣医 絵. ヌ ya 若九眼英 算.

```
[235] taji_alc.cpfid(x^3-x-1,x^4+2*x^3+2*x^2+2*x+1);
[[[1/2*x-1,[x^2+1,1]], [[-1/2,[x+1,2]], [1/2,[x+1,1]]]]]
[236] taji_alc.cpfid(x^3-x-1,x^4+2*x^3+2*x^2+2*x+1|switch=1);
[[[x-2,2],[x^2+1,1]], [[[-1,2],[x+1,2]], [[1,2],[x+1,1]]]]]
[237] taji_alc.cpfid(x^3-x-1,x^4+2*x^3+2*x^2+2*x+1|switch=10);
[[1/2*x-1,[x^2+1,1]], [1/2*x,[x+1,2]]]
[238] taji_alc.cpfid(x^3-x-1,x^4+2*x^3+2*x^2+2*x+1|switch=11);
[[[x-2,2],[x^2+1,1]], [[x,2],[x+1,2]]]
```

ChangeLog

1.2.2 taji_alc.snoether

```

taji_alc.snoether(num,den)
    :: num/den 絢篁 f 亥絮潟 吾守 若帥寂 罷.
return    [[絢, 若帥寂 ],...] 鴻.
          若帥寂 , 篆違蕭 研鴻 鴻
num       ( 違 絢) 素絳
den       ( 違 罰) 素絳
          障 ( 違 罰 Q 箏 茹 c ) [[絢, 茲綺],...] 鴻.
switch    激 恰絢
          case 0 : 若帥寂 [遺医絳,...] 鴻 .
          case 1 : 若帥寂 [贗遺医 鴻,...] 鴻 .
          case 10 : 若帥寂 [[贗遺医絳,...], 贗] 鴻 .
          case 20 : 若帥寂 [[贗遺医 鴻,...], 贗] 鴻 .
          default : case 0
• taji_alc.snoether(), denQ 箏 茹 c , 絢 綽若帥寂 菴.
• den, 鴻 ュ障. (素絳 ュ, 腎 .) 翫 , , 絳 , 贗遺医 絵. ャ
  若九眼莢 算.
• 祉ゃ switch 御 .
  case 10, 若帥寂 篆医 , 罰 箆 鴻 茵 障 . , や 育 (鴻 ) ,
  傑 c .
  case 20, 箆 ( 鴻 ), 若帥寂 篆違ヤ 鴻. 箆 育 (鴻 )
  , 激 (case 10 障), 医 腸咲 茵 障 .
[296] taji_alc.snoether(1, [[x^3-x-1,3]]);
[[x^3-x-1, [9/529*x^2-27/1058*x+11/1058, -81/529*x^2-9/529*x+135/529, -49
05/12167*x^2+4563/12167*x+3270/12167]]]
[299] taji_alc.snoether(1, [[x^3-x-1,3]]|switch=1);
[[x^3-x-1, [[18*x^2-27*x+11,1058], [-81*x^2-9*x+135,529], [-4905*x^2+4563
*x+3270,12167]]]]
[297] taji_alc.snoether(1, [[x^3-x-1,3]]|switch=10);
[[x^3-x-1, [[414*x^2-621*x+253, -3726*x^2-414*x+6210, -9810*x^2+9126*x+65
40],24334]]]
[298] taji_alc.snoether(1, [[x^3-x-1,3]]|switch=20);
[[x^3-x-1, [[18*x^2-27*x+11,529], [-162*x^2-18*x+270,529], [-9810*x^2+91
26*x+6540,12167]],2]]]

[241] taji_alc.snoether(x^3+1,x^18-2*x^14+x^10-x^8+2*x^4-1|switch=10);
[[x^4+x^3+x^2+x+1, [[-2*x^2-x-2],50]], [x^4-x^3+x^2-x+1, [[-2*x^3+4*x^2-x
-2],50]], [x^2+1, [[-x+1,8*x+5],32]], [x+1, [[-6,-39],320]], [x-1, [[2,-24,6
7],320]]]

```

ChangeLog

1.2.3 taji_alc.laurent_expansion

```

taji_alc.laurent_expansion(num,den)
    :: num/den ㄗ 若 喝 源荀 違罷.

return    [[紃, 若 喝 ],...] 鴻.
          若 喝 違, 蕭箏 違 研鴻 鴻.

num       ( 違 紃) 素縷
den       ( 違 罰) 素縷
          障 ( 違 罰 Q 箏 茹 c ) [[紃, 茲綺],...] 鴻

switch    激 恰紃
case 0 :   若 喝 違 [違医縷,...] 鴻 .
case 1 :   若 喝 違 [質違医 鴻,...] 鴻 .
case 10 :  若 喝 違 [[質違医縷,...], 質] 鴻 .
case 20 :  若 喝 違 [[質違医 鴻,...], 質] 鴻 .
default : case 0

• taji_alc.laurent_expansion(), taji_alc.snoether() 箏帥 c, 若 喝 違罷.
• taji_alc.laurent_expansion() , C 箏 1 鴻 繪 , Q 箏 紃 繪 若 喝
  違罷. 祉や 違 鴻 , 紃 句鴻演 若 喝 医縷 . 緇 c, 1 鴻 若 喝 違
  翫 , 罷 若 喝 医縷 紃 句 (鴻 合亥) や篁 e ヤ綽荀.

[354] taji_alc.laurent_expansion(x,(x-1)^3);
[[x-1,[1,1,0]]]
[356] taji_alc.laurent_expansion(x^5+x^4+x^3+x^2+x+1,(x^4+1)^3);
[[x^4+1,[1/64*x^2+1/64*x,1/16*x^3+1/16*x^2-3/128*x-5/128,-5/128*x^3-1/
8*x^2-3/16*x]]]

```

Section 1.2.2 [taji_alc.snoether], page 2

ChangeLog

1.2.4 taji_alc.residue

taji_alc.residue(num,den)
:: num/den サ 違罷.

return [[続,...] 鴻

num (違 続) 紊緒

den (違 罰) 紊緒

障 (違 罰 Q 箒 茹 c) [[続, 茲綺],...] 鴻

switch 激 恰紘

case 0 : 違遺医緒 .

case 1 : 違贗遺医 鴻 .

default : case 0

pole 激 恰紘

[続,...] 激 渦 鴻

- taji_alc.residue(), denQ 箒 茹 c, 続 句 (渦 違 サ) 違奄.

- 激 渦 pole 紘違 続 帥 違奄. 紘箒 0 奄.

- taji_alc.residue() 眼 冴 , C 箒 1 鴻 絵 , Q 箒 続 絵 違
罷. 祉や 違, 続 句鴻演 医緒 . 緋 c, 1 鴻 医や 翫 , 罷医緒 続 句 (渦 合
亥) や篁 e ヤ 綽荀.

[219] taji_alc.residue(1,x⁴+1);

[[x⁴+1,-1/4*x]]

, 罷医緒-1/4*x, x⁴+1(4や) 句鴻篁 e ヤ ヤ 医や .

- den, 鴻 ャ障. (紊緒 ャ, 腎 .) 翫 , , 緒 , 贗遺医 絵. ャや
若九眼英 算.

[221] taji_alc.residue(x⁸, [[x³-x-1,3]]);

[[x³-x-1,-2243/12167*x²+2801/12167*x+5551/12167]]

[222] taji_alc.residue(x²+x, [[x+1,3], [x-1,3], [x²+3*x-1,2]]);

[[x²+3*x-1,-284/4563*x-311/1521], [x-1,89/432], [x+1,7/432]]

[223] taji_alc.residue(x²+x, [[x+1,3], [x-1,3], [x²+3*x-1,2]] | switch=1)

;

[[x²+3*x-1, [-284*x-933,4563]], [x-1, [89,432]], [x+1, [7,432]]]

[234] taji_alc.residue(x²+x, [[x+1,3], [x-1,3], [x²+3*x-1,2]] | switch=1,

pole=[x+1]);

[[x+1, [7,432]]]

[225] taji_alc.residue(x³+1, x¹⁸-2*x¹⁴+x¹⁰-x⁸+2*x⁴-1);

[[x⁴+x³+x²+x+1, -1/25*x²-1/50*x-1/25], [x⁴-x³+x²-x+1, -1/25*x³+2/
25*x²-1/50*x-1/25], [x²+1, 1/4*x+5/32], [x+1, -39/320], [x-1, 67/320]]

ChangeLog

1.2.5 taji_alc.invpow

```

taji_alc.invpow(poly,f,m)
    :: 遺箵  $Q[x]/\langle f \rangle$  箵  $poly$   $m$  箵罷.

return

poly      紊絳
f          Q 箵      絳
m          俱
switch     激 恰絳
    case 0 : 遺医絳 .
    case 1 : 贗遺医 鴻 .
    default : case 0
• polyf      違 .
•      眼 冴      若 弘菴 2 箵羈 . 絨紊絳 茫綽 .
[236] taji_alc.invpow(3*x^2-1,x^3-x-1,1);
      -6/23*x^2+9/23*x+4/23
[237] taji_alc.invpow(3*x^2-1,x^3-x-1,1|switch=1);
      [-6*x^2+9*x+4,23]
[238] taji_alc.invpow(3*x^2-1,x^3-x-1,30|switch=1);
      [1857324483*x^2-2100154824*x-477264412,266635235464391245607]

```

ChangeLog

1.2.6 taji_alc.rem_formula

taji_alc.rem_formula(polylist)
 :: 素綾 f(x) 箏 遺 罷.

return switch 茯

polylist f(x)Q 箏 茹 c [[紃, 茲綺, 句鴻],...] 鴻

switch 激 恰紃

case 0 : x 雁, 鴻 .

case 10 : f(x) 雁, 鴻 . (箏紃 翫 水 綽)

case 20 : x 雁, symbolic ; 障 .

default : case 0

- 眼 冴, 若 遺 .
- 遺 ; 文号 や, switch 御綾 .
- switch=0 祉や 鴻菴違鴻. 箴 , $f(x)=f_1(x)^{m_1}f_2(x)^{m_2}$. $\sqcup [[f_1(x), m_1, z_1], [f_2(x), m_2, z_2]]$
 . 祉や,
 $[r_{f_1}(x, z_1), r_{f_2}(x, z_2)]$
 鴻 . , 遺
 $r(x) = r_{f_1}(x, z_1) + r_{f_2}(x, z_2)$
 綽 渦 . $r_{f_i}(x, z_i)$,
 $[p^{(m_i-1)}(z_i) \text{ 違 } xz_i \text{ 綾}, \dots, p^{(0)}(z_i) \text{ 違 } xz_i \text{ 綾}]$
 鴻 .
- switch=10 祉や 鴻菴違鴻. 箴 , $f(x)=f_1(x)^m$. $\sqcup [[f_1(x), m, z]]$. 祉や,
 $[r_{f_1}(x, z), \dots, r_{f_m}(x, z)]$
 鴻 . , 遺
 $r(x) = r_{f_1}(x, z)f_1(x)^{m-1} + \dots + r_{f_m}(x, z)f_m(x)^{m-1}$
 $f_1(x)$ 篆違渦 . $r_{f_i}(x, z)$,
 $[p^{(m-1)}(z) \text{ 違 } xz \text{ 綾}, \dots, p^{(0)}(z) \text{ 違 } xz \text{ 綾}]$
 鴻 .
- switch=20 祉や 鴻菴違鴻. symbolic 阪 $p^{(m)}(z)$, $p(x)^m$ 違 z 篁 e ヤ や 渦 .
- 祉や, 箏紃 句鴻篁 e ヤ . 紃 2 罫 > 札箏 綾 翫 . 箴,
 $[228] \text{ taji_alc.rem_formula}([x^2+1, 1, z]);$
 $[[-1/2*x+1/2]]$
 荀鴻, x^2+1 句鴻 a_1, a_2 , $z a_1 a_2$ 篁 e ヤ,
 $r(x) = (-1/2*a_1*x+1/2) + (-1/2*a_2*x+1/2)$. 阪 , 句鴻 箴水箏ヤ .
 $[583] \text{ taji_alc.rem_formula}([x-1, 1, z_1], [x-2, 1, z_2]);$
 $[[-x+2], [x-1]]$
 $[584] \text{ taji_alc.rem_formula}([x-1, 1, z_1], [x-2, 1, z_2] | \text{switch}=20);$
 $(-p^{(0)}(z_1) + p^{(0)}(z_2)) * x + 2 * p^{(0)}(z_1) - p^{(0)}(z_2)$
 $[587] \text{ taji_alc.rem_formula}([x-1, 2, z_1]);$


```

[[x-1,1]]
[588] taji_alc.rem_formula([[x-1,2,z1]]|switch=20);
p^(1)(z1)*x-p^(1)(z1)+p^(0)(z1)

[494] taji_alc.rem_formula([[x-1,3,z1]]|switch=20);
1/2*p^(2)(z1)*x^2+(-p^(2)(z1)+p^(1)(z1))*x+1/2*p^(2)(z1)-p^(1)(z1)+p^(0)(z1)

[229] taji_alc.rem_formula([[x+1,2,z1],[x^3-x-1,1,z2]]);
[[-x^4-x^3+x^2+2*x+1,-2*x^4-3*x^3+2*x^2+5*x+3],[(-1/23*z2^2-10/23*z2+16/23)*x^4+(-12/23*z2^2-5/23*z2+31/23)*x^3+(-5/23*z2^2+19/23*z2-12/23)*x^2+(22/23*z2^2+13/23*z2-53/23)*x+16/23*z2^2-1/23*z2-26/23]]
[230] taji_alc.rem_formula([[x+1,2,z1],[x^3-x-1,1,z2]]|switch=20);
(-1/23*p^(0)(z2)*z2^2-10/23*p^(0)(z2)*z2-2*p^(0)(z1)+16/23*p^(0)(z2)-p^(1)(z1))*x^4+(-12/23*p^(0)(z2)*z2^2-5/23*p^(0)(z2)*z2-3*p^(0)(z1)+31/23*p^(0)(z2)-p^(1)(z1))*x^3+(-5/23*p^(0)(z2)*z2^2+19/23*p^(0)(z2)*z2+2*p^(0)(z1)-12/23*p^(0)(z2)+p^(1)(z1))*x^2+(22/23*p^(0)(z2)*z2^2+13/23*p^(0)(z2)*z2+5*p^(0)(z1)-53/23*p^(0)(z2)+2*p^(1)(z1))*x+16/23*p^(0)(z2)*z2^2-1/23*p^(0)(z2)*z2+3*p^(0)(z1)-26/23*p^(0)(z2)+p^(1)(z1)

[231] taji_alc.rem_formula([[x^3-x-1,2,z]]|switch=10);
[[[(3/23*z^2-4/23)*x^2+(-1/23*z+3/23)*x-4/23*z^2+3/23*z+4/23,(162/529*z^2-174/529*z-108/529)*x^2+(-105/529*z^2+54/529*z+70/529)*x-108/529*z^2+116/529*z+72/529],[(6/23*z^2+9/23*z+4/23)*x^2+(9/23*z^2-2/23*z-6/23)*x+4/23*z^2-6/23*z+5/23]]]

```

ChangeLog

1.2.7 taji_alc.solve_ode_cp

```

taji_alc.solve_ode_cp(poly, var, exppoly)
:: 遺違 綵 幻縊 合縊 鴻若激弱蓐

$$Pu(z) = f(z), u^{(0)}(0) = c_0, \dots, u^{(n-1)}(0) = c_{n-1}$$

    罷.
    , Pn 遺違 綵 幻縊 箴 , f(z) 医縊 .
return 2 ; 障.
肢 ; 1 (鴻若激若若帥 雁綵)
鴻若激弱蓐 u(z),

$$u(z) = c_0 u_0(z) + \dots + c_{n-1} u_{n-1}(z) + v(z)$$

    膩綵 就 .  $u_0(z), \dots, u_{n-1}(z)$  鴻若激弱蓐 堺 ,  $v(z)$  鴻若激弱蓐 号茹 c ,
    [u_0(z), ..., u_(n-1)(z), v(z)]
    鴻 . 堺 号茹 c , 医縊 鴻 .
肢 ; 2 (育 違 雁綵)
data 鴻若激若若帥箴, 鴻若激弱蓐 u(z)  $c_0, \dots, c_{n-1}$  若帥篁 e ㄗ, 育 違
    雁眼医縊 鴻菴.
poly 紊縊 (P 号 縊)
障 (P 号 縊 Q 箴 茹 c) [[綢, 茲綺], ...] 鴻
var 箴紘 (違 紊)
exppoly 電 就 0, 電 就 f(z) 医縊 鴻.
switch 激 恰紘
case 0 : 医縊 鴻 2 遺医縊 .
case 1 : 医縊 鴻 2 膺遺医 鴻 .
default : case 0
data 激 恰紘
    鴻若激若若帥 [c_0, ..., c_(n-1)] 研鴻 鴻.
    • 茹 f 若 号 (域膊 鍵号) .
    • 紊違 2 腮 綽荀 (号 縊 違 違 紊). poly 紘 var 紘茵腦 羈 .
    • 祉や 号茹  $v(z)$  , 鴻若激惹 > 散  $v(0) = 0, \dots, v^{(n-1)}(0) = 0$  羣鴻若激弱蓐 号茹 c .
    [287] taji_alc.solve_ode_cp(x*(x-3)^2, z, 0);
    [[ [x-3, 0], [x, 1] ], [ [x-3, -z+2/3], [x, -2/3] ], [ [x-3, 1/3*z-1/9], [x, 1/9] ] ]

    [289] taji_alc.solve_ode_cp((x^3-x-1)^2, z, 0|switch=1);
    [[ [x^3-x-1, [(92*z+200)*x^2+(-69*z-254)*x-92*z+43, 529] ] ], [ [x^3-x-1, [(92
    *z+420)*x^2+(-46*z-216)*x-161*z-280, 529] ] ], [ [x^3-x-1, [(-69*z-195)*x^2+
    (23*z+327)*x+23*z+130, 529] ] ], [ [x^3-x-1, [(-161*z-270)*x^2+(69*z+290)*x+
    184*z+180, 529] ] ], [ [x^3-x-1, [-105*x^2+(-23*z+54)*x+69*z+70, 529] ] ], [ [x^3
    -x-1, [(69*z+162)*x^2-174*x-92*z-108, 529] ] ] ]

```

```
[277] taji_alc.solve_ode_cp(x^2-4,z,0);  
[[[x+2,1/2],[x-2,1/2]],[[x+2,-1/4],[x-2,1/4]]]  
[278] taji_alc.solve_ode_cp(x^2-4,z,0|data=[1,-1]);  
[[x+2,3/4],[x-2,1/4]]  
[279] taji_alc.solve_ode_cp(x^2-4,z,0|data=[c0,c1]);  
[[x+2,1/2*c0-1/4*c1],[x-2,1/2*c0+1/4*c1]]
```

ChangeLog

1.2.8 taji_alc.solve_ode_cp_ps

```

taji_alc.solve_ode_cp_ps(poly,var,exppoly)
:: 遺違 綵 幻縹 合縹 渦若激弱蓐
 $Pu(z) = f(z), u^{(0)}(0) = c_0, \dots, u^{(n-1)}(0) = c_{n-1}$ 
    号茹 c 罷.
    , 電 就 帥絲乘院 ,  $f(z) \neq 0$  .

return 医縹 鴻
poly 紊縹 (P 号 縹)
    障 (P 号 縹 Q 箏 茹 c) [[紉, 茲綺],...] 鴻
var 箏紉 ( 違 紊)
exppoly f(z) 医縹 鴻
switch 激 恰紉
    case 0 : 医縹 鴻 2 遺医縹 .
    case 1 : 医縹 鴻 2 膺遺医 鴻 .
    default : case 0
switch2 激 恰紉
    case 0 : 渦若激弱蓐 号茹 c 菴.
    case 1 : 腎 就 号茹 c 菴.
    default : case 0

• 紊違 2 腮 綽荀 (号 縹 違 違 紊). poly 紉 var 紉茵腦 羈 .
[345] taji_alc.solve_ode_cp_ps((x-2)*(x+3),z,[[x-1,1]]);
[[x+3,1/20],[x-1,-1/4],[x-2,1/5]]
[346] taji_alc.solve_ode_cp_ps((x-2)*(x+3),z,[[x-1,1]]|switch2=1);
[[x-1,-1/4]]
[347] taji_alc.solve_ode_cp_ps((x-2)*(x+3),z,[[x-2,1]]);
[[x+3,1/25],[x-2,1/5*z-1/25]]
[348] taji_alc.solve_ode_cp_ps((x-2)*(x+3),z,[[x-2,1]]|switch2=1);
[[x-2,1/5*z-1/25]]
[349] taji_alc.solve_ode_cp_ps((x-2)*(x+3),z,[[x+1,1],[x-2,1]]|switch2
=1);
[[x+1,-1/6],[x-2,1/5*z+2/75]]

[350] taji_alc.solve_ode_cp_ps((x^3-x-1)*(x-3)^2,z,[[x-3,2],[x-1,3*z^2
+1]]);
[[x-1,[-6*z^2-36*z-119,8]], [x^3-x-1,[42291*x^2+55504*x+32313,12167]], [
x-3,[4232*z^2-4278*z-4295,97336]]]

```

ChangeLog

1.2.9 taji_alc.fbt

```
taji_alc.fbt(num,den,var)
:: num/den 紵篁 f 亥絮潟 吾守 若 祉 茵.
```

```
return [医綑 鴻,...] 鴻
```

```
num ( 違 紵) 紊綑
```

```
den ( 違 罰) 紊綑
```

```
障 ( 違 罰 Q 箏 茹 c) [[紵, 茲綺],...] 鴻
```

```
var 箏紵 ( 紊)
```

```
switch 激 恰紵
```

```
case 0 : 医綑 鴻 2 遺医綑 .
```

```
case 1 : 医綑 鴻 2 贗遺医 鴻 .
```

```
default : case 0
```

- 紊違 2 腮 綽荀 (篁 f 亥絮潟 吾守 違 紊). num/den 紵 var 紵茵腦 羈 .
- $taji_alc.fbt()$, $Res(Rat*\exp(z*x))$ 綑 綑 違 違罷. 綑 違 違 医綑 , 医綑 鴻 .

- 眼 冚 $taji_alc.residue()$ 祉弱 , 紵 $taji_alc.residue()$ 若喝冚 膊茵 c .

```
[235] taji_alc.fbt(1,(x^3-x-1)^3,z);
```

```
[[x^3-x-1,(9/529*z^2-81/529*z-4905/12167)*x^2+(-27/1058*z^2-9/529*z+45
63/12167)*x+11/1058*z^2+135/529*z+3270/12167]]
```

Section 1.2.4 [$taji_alc.residue$], page 4

ChangeLog

1.2.10 taji_alc.invfbt

taji_alc.invfbt(exppoly, var)
 :: 医縷 若 祉 茵.

return

exppoly 医縷 鴻

var 箏紵 (医縷 紊)

switch 激 恰紵

case 0 : 違 .

case 1 : 違 [紵, 罰 Q 箏 茹 c 鴻] 鴻 .

default : case 0

- 紊違 2 腮 綽苟 (簞 f 亥違 絨紊縷 違 医縷 紊). 茵腦 羈 .
- taji_alc.invfbt(), exppoly, Res(Rat*exp(z*x)) 綵 域; 腓訝 , Rat 菴.
- taji_alc.fbt() 義膊 .

```
[8] taji_alc.invfbt([[x^3-x-1, 2*x^2*z^2+x*z+1], [x^2+1, z*x+z^2]], z|switch=1);
[3*x^14+14*x^12+39*x^11+33*x^10+179*x^9+206*x^8+350*x^7+223*x^6+126*x^5+176*x^4+107*x^3+101*x^2+15*x-4, [[x^2+1, 3], [x^3-x-1, 3]]]
```

```
[9] taji_alc.fbt(3*x^14+14*x^12+39*x^11+33*x^10+179*x^9+206*x^8+350*x^7+223*x^6+126*x^5+176*x^4+107*x^3+101*x^2+15*x-4, [[x^2+1, 3], [x^3-x-1, 3]], z);
[[x^3-x-1, 2*z^2*x^2+z*x+1], [x^2+1, z*x+z^2]]
```

Section 1.2.9 [taji_alc.fbt], page 11

ChangeLog

Index

(Index is nonexistent)

(Index is nonexistent)

Short Contents

1	1 素 ⁸⁹ 遺撮 ⁹⁵ 亥 ^{9a} 絮 ⁸⁰ 素 ⁸⁹ 素 ⁸² 瀉 ⁸³ 素 ^{9b} 素 ⁸³ 素 ⁸² 吾 ⁸³ 守 ^{9e}	1
	Index	13

Table of Contents

1	1 素 ⁸⁹ 95 遺撮 ⁹⁵ 亥 ^{9a} 84 絮 ⁸⁰ 89 ⁸⁰ 82 渦 ⁸³ 9b ⁸³ ⁸³ ⁸² 吾 ⁸³ 守 ^{9e}	1
1.1	1 素 ⁸⁹ 95 遺撮 ⁹⁵ 亥 ^{9a} 84 絮 ⁸⁰ 89 ⁸⁰ 82 渦 ⁸³ 9b ⁸³ ⁸³ ⁸² 吾 ⁸³ 守 ^{9e} 94 ⁸¹ ⁸³ 91 ⁸³ 83 ⁸² 宴 ⁸³ 若 ⁸² taji_alc ⁸¹ ⁸¹ や ⁸¹ 84 ⁸¹	1
1.2	1 素 ⁸⁹ 95 遺撮 ⁹⁵ 亥 ^{9a} 84 絮 ⁸⁰ 89 ⁸⁰ 82 渦 ⁸³ 9b ⁸³ ⁸³ ⁸² 吾 ⁸³ 守 ^{9e} 94 ⁸¹ ⁹⁶ ⁹⁵	1
1.2.1	taji_alc.cpf.....	1
1.2.2	taji_alc.snoether.....	2
1.2.3	taji_alc.laurent_expansion.....	3
1.2.4	taji_alc.residue.....	4
1.2.5	taji_alc.invpow.....	5
1.2.6	taji_alc.rem_formula.....	6
1.2.7	taji_alc.solve_ode_cp.....	8
1.2.8	taji_alc.solve_ode_cp_ps.....	10
1.2.9	taji_alc.fbt.....	11
1.2.10	taji_alc.invfbt.....	12
	Index	13