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> restart;
> w:=(1+x)^b*(1+1/x)^a*exp(z*x);

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$$w := (1+x)^b \left(1 + \frac{1}{x}\right)^a e^{zx} \quad (1)$$

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> C:=1;G:=1;F:=0;K:=E*z;J:=C*z+E*b+3*E;A:=0;E:=(B*z+C*b+2*C-H)/(a+b);H:=B*b+B*z-C*a+B+2*C-G;B:=-G/(a-1);

```

$$\begin{aligned} C &:= 1 \\ G &:= 1 \\ F &:= 0 \\ K &:= E z \\ J &:= E b + 3 E + z \\ A &:= 0 \\ E &:= \frac{B z - H + b + 2}{a + b} \\ H &:= B b + B z + B - a + 1 \\ B &:= -\frac{1}{a - 1} \end{aligned} \quad (2)$$

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> sigma:=collect(simplify(A+B*x+C*x^2+E*x^3+F*x^4),[x],factor);
  latex(%);

```

$$\sigma := \frac{a x^3}{a - 1} + x^2 - \frac{x}{a - 1}$$

```

{\frac {a{x}^3}{a-1}}+{x}^2-{\frac {x}{a-1}}
> tau:=collect(simplify(G+H*x+J*x^2+K*x^3),[x,t],factor);latex(%);

```

$$\tau := 1 + \frac{z a x^3}{a - 1} + \frac{(a b + a z + 3 a - z) x^2}{a - 1} - \frac{(a^2 - 2 a + b + z + 2) x}{a - 1}$$

```

1+{\frac {az{x}^3}{a-1}}+{\frac {\left(ba+za+3,a-z\right){x}^2}{a-1}}-{\frac {\left(a^2-2a+b+z+2\right)x}{a-1}}
> diff(sigma*w,x)-tau*w:
> collect(factor(expand(%)),[x],factor);

```

$$0 \quad (3)$$