```
> alias(D=DD):
> f := ((4-x)*ln(x)-3*x)/(x*ln(x)^2-x^2*ln(x)): Int(f,x);
```
$$\int \frac{(4-x)\,\ln(x) - 3\,x}{x\,\ln(x)^2 - x^2\,\ln(x)}\ \mathrm{d}x$$

```
> C := (4/x-1)*ln(x)-3; D := ln(x)^2-x*ln(x);
```
$$C := \left(\frac{4}{x} - 1\right)\ln(x) - 3$$

$$D := \ln(x)^2 - x\,\ln(x)$$

```
> Int( subs(ln(x)=theta,C/D), x ), theta=ln(x);
```
$$\int \frac{\left(\dfrac{4}{x} - 1\right)\theta - 3}{\theta^2 - x\,\theta}\ \mathrm{d}x,\ \theta = \ln(x)$$

```
> TR := subs(ln(x)=theta, 'resultant'(C - z*diff(D,x),D,theta));
```
$$TR := resultant\!\left(\left(\frac{4}{x} - 1\right)\theta - 3 - z\left(\frac{2\,\theta}{x} - \theta - 1\right),\ \theta^2 - x\,\theta,\ \theta\right)$$

```
> factor(TR);
```
$$(z - 3)\,(z - 1)\,(x - 1)$$

```
> c[1] := 3:
  v[1] := subs(ln(x)=theta,'gcdex'(C-c[1]*diff(D,x),D,theta));
  'c[1]' = c[1], 'v[1]' = v[1];
```
$$v_1 := gcdex\!\left(\left(\frac{4}{x} - 1\right)\theta - \frac{6\,\theta}{x} + 3\,\theta,\ \theta^2 - x\,\theta,\ \theta\right)$$

$$c_1 = 3,\ v_1 = \theta$$

```
> c[2] := 1:
  v[2] := subs(ln(x)=theta,'gcdex'(C-c[2]*diff(D,x),D,theta));
  'c[2]' = c[2], 'v[2]' = v[2];
```
$$v_2 := gcdex\!\left(\left(\frac{4}{x} - 1\right)\theta - 2 - \frac{2\,\theta}{x} + \theta,\ \theta^2 - x\,\theta,\ \theta\right)$$

$$c_2 = 1,\ v_2 = \theta - x$$

```
> Int(C/D,x) = c[1]*log(v[1])+c[2]*log(v[2]), theta=ln(x);
```
$$\int \frac{\left(\dfrac{4}{x} - 1\right)\ln(x) - 3}{\ln(x)^2 - x\,\ln(x)}\ \mathrm{d}x = 3\,\ln(\theta) + \ln(\theta - x),\ \theta = \ln(x)$$