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> f := (x,y,z)→z - sin(x·y) :
> x := t→t :
> y := t→ln(t) :
> z := t→exp(t - 1) :
> diff(f(x(t),y(t),z(t)),t);

$$e^{t-1} - \cos(t \ln(t)) (\ln(t) + 1) \quad (1)$$

> D[1](f)(x,y,z)·D(x)(t) + D[2](f)(x,y,z)·D(y)(t) + D[3](f)(x,y,z)·D(z)(t);

$$-\cos(xy)y - \frac{\cos(xy)x}{t} + e^{t-1} \quad (2)$$

> eval(%o, [x=x(t),y=y(t),z=z(t)]);

$$-\cos(t \ln(t)) \ln(t) - \cos(t \ln(t)) + e^{t-1} \quad (3)$$

> collect(%o, cos);

$$(-\ln(t) - 1) \cos(t \ln(t)) + e^{t-1} \quad (4)$$


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