

Miss Osborne, Miss Carr, & a partner Miss Osborne, Miss Carr, & a partner
enjoyed lively
men were standing in very ~~filmmen~~ men were standing in very ~~filmmen~~
~~some~~ ^{some} ~~after~~ ^{after} ~~the~~ ^{the} ~~vac~~ <sup>vac
Office of the set, walking off Office of the set, walking off
extra to order the dance, while extra to order the dance, while
me passing before her, to be me passing before her, to be
ting Patricia hastily said - Chaoting Patricia hastily said - Cha
ardon for not keeping my engage ardon for not keeping my engage
I am going to dance these two don I am going to dance these two don
Beverford. I know you will excuse Beverford. I know you will excuse
tainly dance with you after tea tainly dance with you after tea
staying for an answer, ^{she} turned staying for an answer, ^{she} turned
Miss Carr, & in another minute Miss Carr, & in another minute we
begin the set. begin the set.
Beverford to the top of the ~~even~~ Beverford to the top of the ~~even~~
little boy's face had been interes little boy's face had been interes
^{"in ity" happiness} ^{"in ity" happiness}</sup>

or for $\int_l^{l+k} f(x) \frac{dx}{dt} dt \dots \dots \dots \int_l^{l+k} \frac{df_1(\psi t)}{dt} dt$

Since $f(x) \frac{dx}{dt} = \frac{df_1(x)}{dx} \cdot \frac{dx}{dt} = \frac{df_1(\psi t)}{d(\psi t)} \cdot \frac{d(\psi t)}{dt}$ which last is
 by the Rules of Differentiation = $\frac{df_1(\psi t)}{dt}$ or $\frac{df_1(x)}{dx}$

Secondly: by pages 100 & 101, (1) $\varphi(x) + C = \int_a^x \varphi'(x) dx = \int_a^x \frac{d\varphi(x)}{dx} dx$

(2) And $\varphi(a+h) - \varphi(a) = \int_a^{a+h} \varphi'(x) dx = \int_a^{a+h} \frac{d\varphi(x)}{dx} dx$

~~Therefore, in $\int_l^{l+k} \frac{df_1(\psi t)}{dt} dt$ we consider $f_1(\psi t)$ as equivalent~~

to $\varphi(x)$ in (1). Therefore if in $\int_l^t \frac{df_1(\psi t)}{dt} dt$, we consider

$f_1(\psi t)$ as equivalent to $\varphi(x)$ in (1); t as equivalent to x ; l as
equivalent to a ; we have $\int_l^t \frac{df_1(\psi t)}{dt} dt = f_1(\psi t) + C$

And similarly $\int_l^{l+k} \frac{df_1(\psi t)}{dt} dt = f_1(\psi(l+k)) - f_1(\psi l)$, derived from (2)

A page of Ada Lovelace's study of calculus survives among her correspondence with the mathematician and tutor Augustus de Morgan. Through her collaboration with Charles Babbage, inventor of the mechanical computer, she would go on to write what many regard as the first computer program.

Oxford, Bodleian Library, MS. Dep. Lovelace Byron 170, fol. 354v (detail).



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