Subject _____ موضوع الدرس

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$a^2 - b = 1 \Rightarrow a = \mp\sqrt{1+b}$

$Z = aX + by + C \Rightarrow Z = \mp\sqrt{1+b}\,X + by + C$

$\ln Z = a(\ln x) + b(\ln y) + C$

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أكثر من

Example 8- $q = px + p^2x^2$

let $X = \ln x$ فرضية

$xp = \frac{\partial Z}{\partial X} = p_1$

$\Rightarrow q = p_1 + p_1^2$ (Case 1) حولت الى معادلة p,q

$\Rightarrow$ let $q = b$, $p_1 = a$

$\Rightarrow b = a + a^2$

$Z = aX + by + C$

$= aX + (a + a^2)y + C$

aX ← $\ln x$ ، $(a+a^2)y$ ← $\ln y$

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مثال example

$z^2 = pqxy$

let $X = \ln x$, $Y = \ln y$

$x p = \frac{\partial z}{\partial X} = p_1$, $y q = \frac{\partial z}{\partial Y} = q_1$

$z^2 = p_1 q_1$ Case (2)

لان z^2 ولس z وانا اكراقسم عليها

لان p, q فاعليها تربيع

$z = f(u)$, $u = x + ay$

$p_1 = \frac{\partial z}{\partial u}$, $q_1 = a\frac{\partial z}{\partial u}$

$z^2 = \left(\frac{\partial z}{\partial u}\right).\left(a\frac{\partial z}{\partial u}\right)$

$z^2 = a\left(\frac{\partial z}{\partial u}\right)^2$ نجذر الطرفين

$z = \pm\sqrt{a}\ \frac{\partial z}{\partial u}$

$\int \partial u = \pm\sqrt{a}\int \frac{\partial z}{z}$

$\Rightarrow u = \pm\sqrt{a}\ \ln|z| + C$

$\Rightarrow x + ay = \pm\sqrt{a}\ \ln|z| + C$

$\Rightarrow (\ln x + a\ln y) = \pm\sqrt{a}\ \ln|z| + C$