La Matematiko

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(re: Differential Equations)

$f' + Pf = Q$	760820
This is the defining form of a first order linear differential equation. Note that it is the 17^{th} letter of the alphabet that is on the right hand side of the equation, not a zero. P and Q are considered to be "known" functions, and f is the "unknown" function that is to be "found" or "solved for".	760830
Example. Let $f = i^2$ and $P = i$.	760840
Then $f' = 2i$, and $f' + Pf = 2i + (i)(i^2) = 2i + i^3$, which we take to be Q.	760850
Then $f' + if = 2i + i^3$ is a first order linear differential equation in which $P = i$ and $Q = 2i + i^3$.	760860

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