

Heat application

— $(cu')' = f$ has other interpretations, e.g.,

$u(x)$ = equilibrium temperature at position x on a rod.

c = specified thermal diffusivity of the material.

$f(x)$ = specified heat source at position x

$u(0) = T$ means temperature u at end $x=0$ of the rod is T (specified)

$\frac{du}{dx}(1) = 0$ means rate of change of temp u with respect to x at end $x=1$ is 0: or, no heat flux across the end $x=1$ of rod.