

PDE's – Heat Flow – Examples

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Hello everyone,

I am currently trying to learn PDE's and have some tricky heat flow problems. Can anyone help me out?

Given the following:

$$du/dt(x,t) = d^2u/dt^2(x,t) + e^{-x}, 0 < x < \pi, t > 0$$

$$u(0,t) = u(\pi,t) = 0, t > 0$$

$$u(x,0) = \sin(2x), 0 < x < \pi$$

Does anyone know what the physical interpretation of the given initial-boundary value problem is?

Does anyone know any good practical examples of the heat equation in engineering?

Thanks,
zSXD

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◇ *From:* Peter Spellucci
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◇ *From:* Olin Perry Norton
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