

# Your Paper

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## 1 questions

- 1) The problems is behaving like I expected as it has a sin wave multiplied with e both different variables t and x. So when you take the partial with respect to x or y you can see how it would work. With e we have a negative constant so to me that indicated that the function heat is decreasing and the sin part shows that is is oscillating through time as heat is distributed through.
- 2) As time increase I notice that our approximation become a line that to me means that the heat is being evenly distributed through as time increases so does space and as that happens the heat as we say cools down.
- 3) When we reduce one the values dt or h I expect more points of data. When we reduce dt the system becomes more stable. When we reduce h it becomes less stable. Note the start stable at first but change over time it will be less stable. When we reduce both I believe we have a stable system at first but like when we reduce h it will become less stable with its approximations.

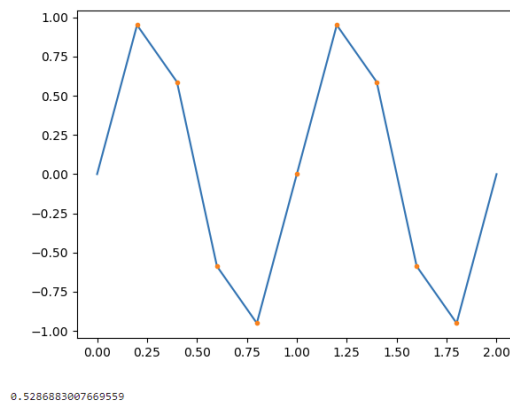


Figure 1: initial answer with dt=0.025 and h=0.2

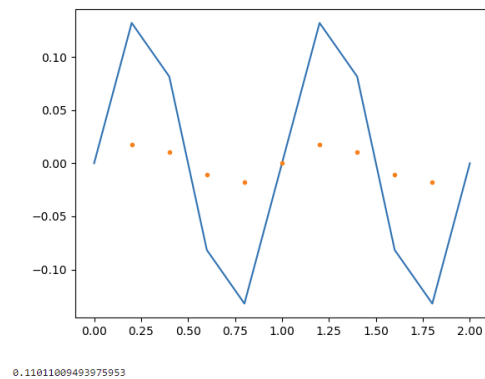


Figure 2: answer after a couple of interactions with  $dt=0.025$  and  $h=0.2$