FOURIER ANALYSIS & METHODS GOALS FOR 2020.01.22

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1. Learning objectives

Our goals for today are that:
(1) You will be able to use separation of variables to find pairs of functions to solve PDEs which depend on two independent variables.
(2) You will be able to use the boundary conditions and/or geometry of the problem to help find these solutions, by checking that your solutions satisfy the boundary conditions and/or geometric constraints.
(3) You are able to recognize when you may use the superposition principle to smash all these solutions into a super solution and do this in that case.
(4) You can give the definition of a function which is periodic with period p straight off the top of your head.
(5) You can give the definition of the "L2" scalar product for two functions defined on an interval $[a, b]$.

Ready, set, let's go!