FOURIER ANALYSIS & METHODS GOALS FOR 2020.02.03

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1. LEARNING OBJECTIVES

Our goals for today are that:
(1) You will be able to use the Cauchy-Schwartz inequality in Hilbert spaces.
(2) You will be able to use the triangle inequality in Hilbert spaces.
(3) You will be able to give three equivalent conditions to determine when an orthonormal set in a Hilbert space is in fact an orthonormal *basis.*
(4) You will be able to use Parseval's equality to compute nifty sums like $\sum \frac{1}{n^4}$.

Ready, set, let's go!