

Quiz # 8

Name: _____

Date: 3/11/2022

Math 54: Fall 2022

Consider the vector space of real valued functions defined on the domain $[-1, 1]$ equipped the standard inner product.

Problem 1 - 3 Points

Find an orthogonal set that has the same span as $\{1, x, x^2\}$ on this domain.

Problem 2 - 3 Points

Find the norms of each function in the orthogonal set you found above.

Problem 3 - 4 Points

Find the best approximation of the function e^x on $[-1, 1]$ using the functions $\{1, x\}$ via projection.

Problem 4 - 1 Points

Which of these are real places in Australia? Prominent Nob, Woolloomooloo, Wanka Creek, Peculiar Knob