

Fourier Lab Report Form

Due April 12, 2002

Section: _____

Team number: _____

Data set # _____

Print the names of your team members:

We affirm in accordance with the Duke Honor Code that this report is original work done by the members of our team. (Please sign below.)

Date: _____

1. Fill in the following information about the periodic function which you analyzed.

Period of the function: _____

How did you determine the period?

2. How did you determine how many coefficients to compute?

3. List all of the Fourier coefficients which you computed. Round to two decimal places.

$$a_0 = \underline{\hspace{2cm}}$$

$$a_1 = \underline{\hspace{2cm}} \quad b_1 = \underline{\hspace{2cm}}$$

$$a_2 = \underline{\hspace{2cm}} \quad b_2 = \underline{\hspace{2cm}}$$

et cetera

4. Write out the explicit Fourier series to as many harmonics as you computed.

5. Show below how to compute by hand one of following for your function: a_k or b_k for some $k \geq 2$. State what approximating method you used.

6. Attach a copy of the graph of the Fourier approximation you computed. Use the same ranges that were used on the graph that was shown on your project.