

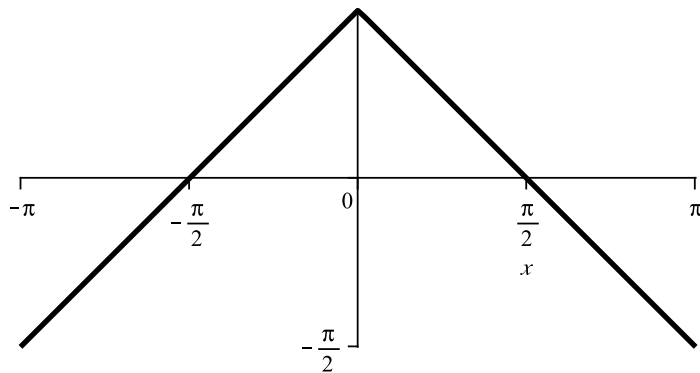
Homework 3

Each of the following problems give the graph of a 2π -periodic function. Use Maple or a similar computer mathematics program to do the following items.

On all graphs let the x -coordinate vary from -2π to 2π .

- Write an expression for the function.
- Graph the function. (This graph should match the graph you started with, except that the domain is larger.)
- Compute the Fourier coefficients.
- Graph the function and S_1 .
- Graph the function and S_2 .
- Graph the function and S_5 .
- Graph the function and S_{20} .

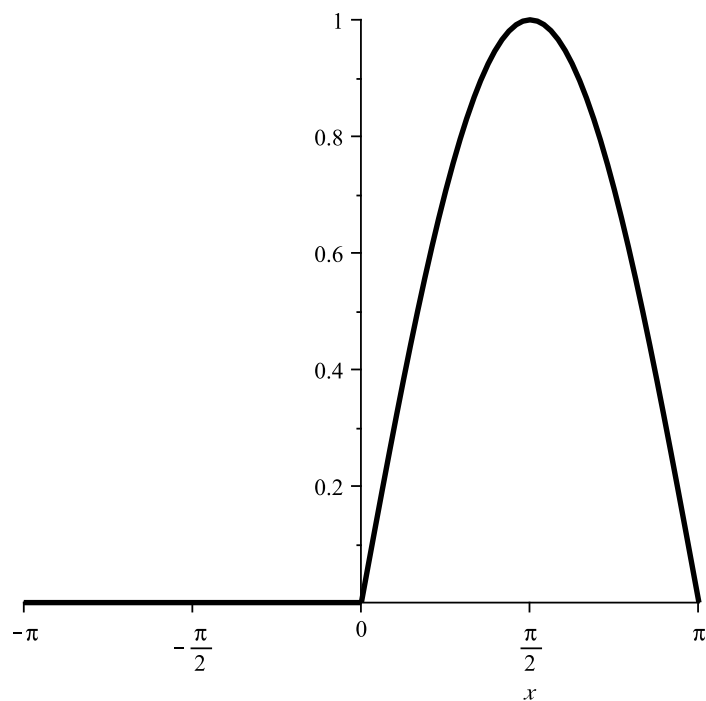
You may use technology of your choice and print your results out, or you may email me a Maple worksheet, with appropriate commentary. See the example from the course website for formatting and Maple hints.



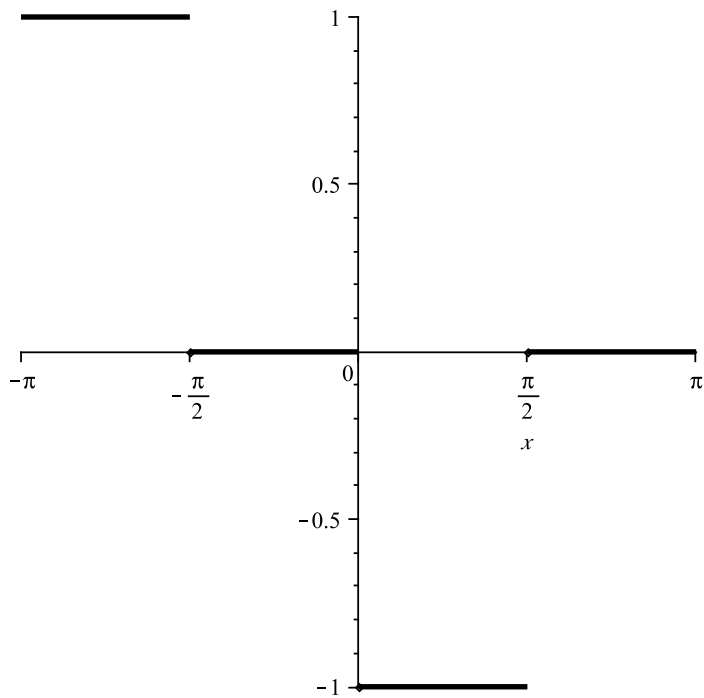
Exercise 1.

Exercise 2. Hint: The arches are some kind of sine curve.

Date: September 13, 2009.



More Hints: This problem causes Maple some problems. You may need to simplify the problem some before feeding it to the computer. Even then you may need to compute the first few terms of the sum separately.



Exercise 3.