

Problem 4 (due Monday, October 25)

a) Let  $x_1, \dots, x_n$  be real numbers. Prove that 
$$\frac{\sin(x_i - x_j)}{x_i - x_j} \geq \frac{\sin(x_i + x_j)}{x_i + x_j}$$
 with the convention that  $\frac{\sin x}{x} = 1$  when  $x = 0$ .

b) Compute  $\int_0^1 \sin 2x \sin 5x \, dx$ .

The problem was solved by Ashton Keith. Ashton's solution is similar to our solution. For details see the following link [Solution](#).

From:

<https://www2.math.binghamton.edu/> - **Department of Mathematics and Statistics, Binghamton University**

Permanent link:

<https://www2.math.binghamton.edu/p/pow/problem4f21>

Last update: **2021/10/26 05:35**

