

Spring 2006 MPC – Set 2, Due by 5pm on Friday, March 24.

Instructions: All GSU Undergrads are eligible. Submit your solutions to the Mathematics office. Please include your name and e-mail address. Have fun!

http://cost.georgiasouthern.edu/math/math_competition/math_competition.php

1. (V. Maymeskul) Show that, for any integer $n > 1$, the sum $1 + \frac{1}{2} + \frac{1}{3} + \cdots + \frac{1}{n}$ is not an integer.

2. (L. Braselton) Show that $\cos 36^\circ - \cos 72^\circ = \frac{1}{2}$. (Do not use calculators.)

3. (G. Lesaja) Find $\sum_{k=1}^{\infty} \frac{2k}{3^{k+1}}$.