

Find the Sum Place a rectangle into xy -plane. Let m_1, m_2, m_3, m_4 be the slopes of consecutive sides. Assume that $m_1 + m_2 = -3/2$. Find the sum $\sum_{i=1}^4 \sum_{j=1}^4 m_i \cdot m_j$.

★ Please **Submit** your solution to

- ✓ Dr. Erol Akbas @ matexa@langate.gsu.edu or
- ✓ Dr. Yuanhui Xiao @ matyxx@langate.gsu.edu

before the **deadline: Friday, February 25, 2011, 5:00PM.**

★ You may get a hard copy of this problem in the box for **Problem of the Month** in the 7th floor of COE (College of Education).

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Problem of Last Month: How to convince other people that this answer is wrong?

A couple plan to have three children. What is the chance they will have just one boy? An easy answer is, one-third (1/3). Of course, you know the answer is incorrect since you have learnt the binomial distributions. It may take you some effort to convince a person who has limited knowledge in mathematics that this answer is wrong. However, there is an obvious and easy way to show that the answer is wrong. How to convince a person whose knowledge in mathematics is very limited that the answer is wrong?

Winner: Phuong Le.

Solution. Use the same logic, we would conclude that, the chance to have three boys is three out of three, 100%. Of course, you know this can not be true.

You can also convince other people that the answer is wrong by listing all the possibilities. Let us use B to stand for a boy and G a girl, here are the possible outcomes: BBB, BBG, BGB, BGG, GBB, GBG, GGB, GGG. Out of the eight cases, only three of them have just one boy. So, the chance is 3/8, not 1/3.