

**MATH 515 HOMEWORK-1 DUE AT THE BEGINNING OF CLASS ON MONDAY,  
SEPT. 8**

One goal for this course is for you to develop your skill in effectively communicating mathematics. With this in mind, you should clearly write up your solutions.

- (1) This problem deals with the  $m \times n$  grid we looked at tonight in class.
  - Let  $n = m$ . Write a complete solution to the problem in this case.
  - Let  $n = 1$  and vary  $m$ . Write a complete solution to the problem in this case.
  - Let  $n = 2$  and vary  $m$ . Write a complete solution to the problem in this case.
  - Let  $m$  and  $n$  denote prime numbers. Write a complete solution to the problem in this case.
  - Provide any other work you have toward a complete solution for *arbitrary*  $m$  and  $n$ . (A complete solution would be great!)
- (2) *Actively* read all of the first chapter in "Discovering Geometry."
- (3) Do problems 1 - 5 from this chapter.