

MATH 290-NUMBER THEORY FOR TEACHERS

PROBLEM OF THE DAY #25

DUE WEDNESDAY, APRIL 16, 2014

1. Can you find any pentagonal numbers that are also squares? What equation do you get if you set the n th pentagonal number with the m th square? Can you manipulate this equation into something of the form $x^2 - dy^2 = 1$? (Hint: You might need to complete the square, and m and n will not be equal to x or y .) What is d in this case?