MATH 1525   PROF. PAUL BAILEY   Quiz 1   Student Name:

Problem 1. Consider the line $L : y = 2x - 1$ and the point $P = (4, 2)$.
(a) Find the equation of the line M which is perpendicular to L and passes through P.
(b) Find the point of intersection between the lines L and M.
(c) Find the distance from L to P.

Problem 2. Find the natural domain and range of the following functions:
(a) $f(x) = \sqrt{9 - x^2}$;
(b) $g(x) = \frac{1}{1-x^2}$.

Problem 3 (Extra Credit). Let E be the set of even numbers between 1 and 13 and let T be the set of multiples of 3 between 1 and 13. Find $(E \cup T) \smallsetminus (E \cap T)$.