

**Quiz # 1 — 09/4/14**

Answer all questions in a clear and concise manner. Remember that answers without explanation or that are poorly presented may not receive full credit.

1. (5 points) Which of the following functions have an inverse whose domain is the whole real line? For each function that has such an inverse, calculate that inverse explicitly.

a.  $f(x) = x^2$

b.  $f(x) = (x + 2)^3$

c.  $f(x) = \frac{1}{x-1}$

2. (5 points) Find all the values of  $x$  in the interval  $[0, \frac{\pi}{2}]$  that satisfy the equation

$$\sin(2x) = \tan(x).$$