## Quiz 2

1. (5 points). Solve the equation  $5^{2z-1} = 3^{5z-1}$  for z. Express the solution with as few logarithms as possible.

2. (5 points). Find a formula for the inverse of the function  $f(x) = \frac{2x+1}{3x-4}$ . What are the domains of both f and its inverse?

3. (5 points). A particular capacitor stores an electric charge of  $Q(t) = Q_0(1 - e^{-t/3})$  while recharging, where  $Q_0$  is the capacitor's maximum capacity in Coulombs and t is in seconds. How long does it take for the capacitor to recharge to 90% of its capacity, starting from zero charge?