# MAS205 Complex Variables 2004-2005

Test II on Prerequisites, 30th September 2005, 2.40-2.55am

Name:                                        Student Number:

*Make sure to write your name and student number above. This is a "closed book" test. Calculators are not allowed.*

Q6: Does $\sum_{n=0}^{\infty} \frac{3}{1+4n}$ converge?

Q7: Evaluate $\sum_{n=0}^{\infty} (8/9)^n$.

Q8: Is $f(x,y) = \frac{(x+y)^2}{x^2+y^2}$ joint continuous at $(x,y) = (0,0)$?

Q9: Is $f(x,y) = \frac{(x+y)^2}{x^2+y^2}$ joint differentiable at $(x,y) = (0,0)$?

Q10: Give an example of a function $f : \mathbb{R}^2 \to \mathbb{R}$ with a stationary point at $(0,0)$.

Thomas Prellberg, September 2005