

# Problem Solving

## Set 4

07 July 2012

1. Let  $f \in C^1[a, b]$ ,  $f(a) = 0$  and suppose that  $\lambda \in \mathbb{R}$ ,  $\lambda > 0$  is such that

$$|f'(x)| \leq \lambda |f(x)|$$

for all  $x \in [a, b]$ . Is it true that  $f(x) = 0$  for all  $x \in [a, b]$ ?

2. What is the greatest sum that cannot be paid for in 2c and 5c coins?