m3a22cw(14).tex

M3A22 ASSESSED COURSEWORK. 18.11.2014

Deadline 12 noon, Tuesday 2 December 2014

Q1. Write $C(K)$ for the value of a call option on a stock of price S with strike price K, as a function of K only (i.e., with everything else held fixed). Show that if $K_1 < K_2$:
(i) $C(K_1) \geq C(K_2)$;
(ii) $C(K_1) - C(K_2) \leq K_2 - K_1$.

Q2. If $K_1 < K_2 < K_3$, show that

$$C(K_2) \leq \frac{K_3 - K_2}{K_3 - K_1}.C(K_1) + \frac{K_2 - K_1}{K_3 - K_1}.C(K_3).$$

NHB