

MATH48181/68181: EXTREME VALUES AND FINANCIAL RISK
SEMESTER 1
QUIZ PROBLEM 3
(Deadline: 11:00am on Wednesday, 27 October 2021)

Consider a class of distributions defined by the cumulative distribution function

$$F(x) = \frac{[G(x)]^{ab}}{[G(x)]^{ab} + \{1 - [G(x)]^b\}^a}$$

where $a > 0$ $b > 0$ and $G(\cdot)$ is a valid cumulative distribution function. Show that F belongs to the same max domain of attraction as G . You may assume that F and G have the same upper end points. Please give full details.

This problem is worth 1 mark. Marking scheme: 1 mark if the answer is correct, and the derivation is correct and detailed enough; 0.5 mark if the answer is correct, and the derivation is incorrect or not detailed enough; 0.5 mark if the answer is incorrect or not given, but the derivation is correct and detailed enough; 0 mark if the answer is correct, but the derivation is not detailed enough; 0 mark if the answer is incorrect, and the derivation is not detailed enough.

Please use Blackboard to submit your answer.