

MATH48181/68181: EXTREME VALUES AND FINANCIAL RISK

SEMESTER 1

QUIZ PROBLEM 2

(Deadline: Tuesday 17 November 2020, 12:00noon)

Suppose X is a random variable with cumulative distribution function

$$F(x) = 1 - p^{(x+1)^2}$$

for $x = 0, 1, \dots$ and $0 < p < 1$. Derive the max domain of attraction of F if there is one. 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 email your solution to mbbssn2@manchester.ac.uk I will mark your solutions and email your mark, feedback and scanned work to you within 24 hours of the deadline. **PLEASE DO NOT FORGET TO WRITE YOUR FULL NAME AND ID.**